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ABSTRACT

The 49 studies contained in this volume, which were originally published and distributed as individual State Dentist Manpower Reports, are the first reports to be drawn from survey data gathered through a national data compilation system designed to collect essential information on the dental manpower supply from all licensed dentists at the time of their annual or biennial registration with state licensing boards. This initial nationwide survey of dentists began with the 1965 registration period and covered a period of approximately 3 years. Information is provided on the location, age, and current professional activity of dentists in each state (except Alabama and California), their professional background, and selected practice characteristics, including the area of specialization and utilization of auxiliary personnel. (Author)

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COMPILATION

STATE DENTIST MANPOWER REPORTS

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COMPILATION
STATE DENTIST MANPOWER REPORTS
1965 - 1967

ED052318

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FOREWORD

The 49 studies contained in this compilation present the results of a national survey in which the dental profession, the Federal Government, the American Association of Dental Examiners, and State licensing boards cooperated. But the ultimate success of the survey, of course, resulted from the willingness of nearly 80,000 dentists across the Nation to complete and return a detailed questionnaire providing information on their professional characteristics and activities.

Although the Division of Dental Health has conducted dental resource studies over a period of years, the urgent need for improving manpower supply to meet increasing demands for care prompted dental manpower surveys on an individual State basis. The value of individual State reports has been attested to in their use by planners of new and expanded dental schools and by developers of training facilities for dental auxiliaries. For convenience and wider use, the individual reports were assembled into this single reference volume. At a later date, national and regional summaries based on analyses of data from these State surveys will be published, in conjunction with data from other sources.

This compilation provides basic source data that can be utilized in projections of future dental manpower requirements, in planning programs for increasing the dental manpower supply, in the development of new dental care programs, and in the implementation of needed State and Federal dental legislation. It is hoped that these data will be helpful to the dental profession in its efforts to achieve a more adequate manpower supply, and will prove of value to governmental agencies and private organizations as well as to individual researchers, health planners, educators, legislators, students, and others concerned with dental manpower.

Viron Diefenbach

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PREFACE

Since 1965, the Division of Dental Health, National Institutes of Health, has been working under contract with the American Association of Dental Examiners to develop a national data compilation system designed to collect essential information on the dental manpower supply from all licensed dentists and dental hygienists by questionnaires supplied at the time of their annual or biennial registration with State licensing boards. The initial survey of dentists began with the 1965 registration period, and in 1966 the program was expanded to include a national survey of licensed dental hygienists. In a further expansion of the system, a second nationwide survey of dentists was initiated in 1967.

The questionnaires of the first survey, on which this volume is based, gathered information on the location, age, and current professional activity of dentists, their professional background, and selected practice characteristics, including area of specialization and utilization of auxiliary personnel. As each dentist returned the completed questionnaire to his State examining board, the board, in turn, forwarded all questionnaires to the American Association of Dental Examiners. The Association coded the questionnaires and punched the survey data onto cards, which were forwarded to the Division of Dental Health for machine tabulation. The Division then tabulated and analyzed the data, preparing a narrative report for each State. In addition, each participating State was furnished a detailed book of tabulations of the basic statistical data on which the report was based.

Because reregistration dates vary among the States, the first survey of dentists was spread over approximately a 2½-year period from December 1964 to July 1967. Questionnaire mailing dates for the States covered in the survey are shown in the accompanying table. All States except Alabama and California participated.

Survey response rates averaged about 90 percent for individual States, based on the total number of licensed dentists as reported by the State dental boards. Even though response rates varied from 70 percent to 99 percent, only 8 States fell below 80 percent. Thirty-three States had response rates of 90 percent or more, including 10 States with rates of 95 percent or higher. Every effort was made to obtain as much data as possible concerning dentists who failed to respond to the survey, especially in those States having a relatively low response rate. Information on nonrespondents, including location of the dentists, their ages, dental school attended, and year of graduation, were obtained from the respective State dental boards or from the appropriate annual edition of the American Dental Directory published by the American Dental Association.

Date of Dentist Manpower Survey, by State

State	Questionnaire mailing date [1/]	State	Questionnaire mailing date [1/]
*Alaska	12-65	Nebraska	1-67
*Arizona	4-65	*Nevada	12-65
Arkansas	12-65	New Hampshire	11-66
Colorado	11-65	New Jersey	8-65
*Connecticut	12-65	*New Mexico	6-65
Delaware	5-66	New York	2-66
*District of Columbia	10-65	North Carolina	10-66
*Florida	9-65	North Dakota	10-66
Georgia	10-66	Ohio	2-67
Hawaii	11-65	Oklahoma	12-65
Idaho	4-66	Oregon	1-65
Illinois	1-66	Pennsylvania	2-66
Indiana	1-66	*Rhode Island	11-65
Iowa	4-65	South Carolina	12-65
Kansas	10-65	*South Dakota	5-65
Kentucky	11-65	*Tennessee	11-65
Louisiana	12-65	*Texas	5-65
*Maine	11-65	Utah	9-66
*Maryland	12-64	*Vermont	4-65
*Massachusetts	1-65	*Virginia	11-65
Michigan	5-65	Washington	9-65
Minnesota	1-66	*West Virginia	1-65
Mississippi	7-67	Wisconsin	8-66
Missouri	4-66	Wyoming	11-65
Montana	12-66		

1/ Questionnaire mailing dates coincide with mailing dates for license renewal for all States except Georgia, New Hampshire, Ohio, and Texas, which were surveyed by a special mailing a few months after their license renewal dates.

* Reports for States marked with an asterisk were prepared according to the rather detailed outline originally developed. All other State reports, except Oregon with a unique format, were prepared according to a simplified outline.

Preparation of the individual State reports extended over a period of approximately 3 years, from mid-1966 to mid-1969. The first 17 reports completed prior to November 1967 were prepared according to a rather detailed outline as follows:

- I. Dentists Licensed in State

- II. Civilian Dentists Located in State
  - A. Sources of Supply
    - 1. Dental schools
    - 2. Dentists relocating in State
  - B. Personal Characteristics
    - 1. Age
    - 2. Advanced training
  - C. Distribution and Current Status
    - 1. Distribution of dentists
    - 2. Professional status
    - 3. Active dentists in relation to population
  - D. Professional Activity
    - 1. Current employment
    - 2. Activity last year
  - E. Practice Characteristics
    - 1. Limited practice
    - 2. Employment of auxiliaries

- III. Out-of-State Civilian Dentists

- IV. Appendix Tables

In order to facilitate the completion of the remaining reports, a simplified format was developed which allowed for the coverage of a subject on a single page, with a tabular presentation and the supporting text. A total of 31 State reports were prepared in the new format according to the following general outline.

- I. Dentists Licensed in State
- II. Professional Training of Dentists Located in State
- III. Distribution of Dentists
- IV. Age of Dentists
- V. Active Dentists in Relation to Population
- VI. Utilization of Auxiliaries
- VII. Other Survey Findings
- VIII. Appendix Table

In general, the preceding outlines were followed for most States. For some States, however, the outline was modified slightly, in accordance with the findings. For example, in a State with a small number of counties, the county data are presented in the body of the report and the appendix table, where county data usually appear, is omitted. For some of the subjects covered in the reports, such as the utilization of auxiliaries, the findings proved to be very similar from State to State, and therefore the supporting text is almost identical, with appropriate changes in figures. Findings relative to other subjects, such as dental school attended and distribution of dentists, often differed considerably from State to State, and consequently the descriptions of data vary according to the survey results. Eight of the State reports contain maps illustrating the distribution of dentists by county. The Oregon report, with a unique format, features the extensive use of graphic material and the organization of the data differs from all the other reports.

Anyone wishing to make combinations or comparisons of State data should keep in mind that there are certain limitations in the comparability of data from State to State. One reason for this is the difference in survey dates among the States, since the survey period extended over approximately two and a half years. Other reasons have to do with the difference in response rates, which varied from State to State, and the fact that some of the reports include nonrespondent data, while others do not. In combining State data to form regional or national data, the reader should review the individual State reports to become familiar with the variations just described. Statistics presented in terms of relative proportions--for example, the percentages of dentists employing auxiliaries or limiting their practices to a dental specialty--may be compared among the various States with more confidence than statistics which must be expressed in terms of numbers of dentists, such as the number of active dentists in relation to population.

It is with only minor alteration and renumbering of pages that the State Dentist Reports have been brought together in this volume. The original copy has been used, which accounts for the variation in format among individual reports. The States are presented in alphabetical order, and the date of completion of each report is shown in the lower margin of the last text page. Black index strips bearing the State name in white have been added in the upper right-hand corner of the first page, for easy reference.

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DENTISTS LICENSED IN ALASKA

A total of 131 dentists registered with the Alaska Board of Dental Examiners during the 1966 registration period (Table 1). The survey questionnaire was completed by 120 dentists, or 92 percent of all those registering. Only 69 of the responding dentists, or 57 percent, are actually located in Alaska. About 31 percent of the respondents are civilian dentists located in another State, and another 10 percent are on active duty with the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in Alaska

Location and military status	All dentists	Percent of dentists
Total licensed	131	100
Respondents	120	92
Nonrespondents	11	8
Respondents	120	100
Civilians in Alaska	69	57
Civilians in another State	37	31
On active duty with Armed Forces	12	10
Not reported	2	2

Only seven of the 120 survey respondents are licensed solely in Alaska. Most of the respondents are licensed in just one other State, but 29 hold licenses in two other States, and 15 are licensed in at least three additional States. Altogether, respondents hold nearly 300 licenses--an average of about two and one-half per dentist. Slightly more than two-fifths of the out-of-State licenses are maintained in Washington, Oregon, and California, while the remainder are held in 33 other States. Civilian dentists located in Alaska hold almost as many licenses as civilian respondents located outside the State. Thirty percent of the in-State dentists are licensed in at least two additional States, compared to 43 percent of the out-of-State respondents.

Civilian Dentists in Alaska

Sources of Supply

Dental schools.--Dentists in Alaska are graduates of 24 dental schools, including one Canadian school. Almost one-third, or 22, of the State's 69 reporting dentists, however, are graduates of the University of Oregon. The next largest source of supply is the University of Washington which graduated six of the in-State respondents. Fourteen dental schools in the North Central States account for 32 of Alaska's dentists, but only two of these schools, Indiana University and the University of Minnesota, have contributed as many as four graduates to the State. More than half of the dentists in Alaska graduated from dental school after 1955.

Dentists relocating in Alaska.--One in every 3 dentists now in Alaska was professionally active as a civilian dentist in another State immediately prior to locating in Alaska. The in-migrant dentists came from eight other States, primarily Washington, Oregon, and Idaho. Almost two-thirds of these dentists relocated during the 1960's.

Personal Characteristics

Age.--Alaska's dentists, as a group, are very young. The median age of reporting dentists is only 38.7 years. Thirty-seven percent of the State's dentists are under the age of 35 and two-thirds are under 45 years of age (Table 2). At the other end of the age scale, one in every five dentists is 55 years old or over, and one in every 10 has reached the age of 65.

Table 2.--Age Distribution

Age	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	69	100	-
Under 30	6	9	9
30 - 34	19	28	37
35 - 44	20	29	66
45 - 54	10	14	80
55 - 64	7	10	90
65 & over	7	10	100

Advanced training.--Seven of the in-State respondents, or 10 percent, reported the completion of one year or more of advanced training beyond their dental degree. All but one of these dentists took clinical training as an intern or resident, and three completed at least one year of advanced academic training.

Distribution and Current Status

Distribution of dentists.--Alaska has been divided into three areas, as shown in the map on the following page, to permit presentation of data on the geographical distribution of dentists.[1] Forty of the State's dentists, almost three-fifths of the total dentist supply, are concentrated in the South Central and Aleutian Chain area which contains a large part of the southern coastal area as well as the Aleutian Islands. Most of the dentists in this area are located in Anchorage, the largest city in Alaska. Another 19 dentists reside in the Southeastern Panhandle area, which consists of a narrow strip of mainland and an adjacent chain of offshore islands along the southeastern coastline of the State. Dentists in this area are concentrated in two cities, Juneau and Ketchikan. The Inland and Northern Alaska area, which includes about seven-tenths of the total land area of the State, is the location of 10 of the State's reporting dentists. Practically all of the dentists in this area are located in Fairbanks, the second largest city in Alaska. Hereafter, these three areas will be referred to as the South Central area, the Southeastern area, and the Northern area.

Active dentists in relation to population.--Of the 69 civilian dentists responding in the survey, 67 reported that they are active in the profession. Only two regarded themselves as fully retired. Based on these responses, there is one professionally active dentist for every 4,084 persons in Alaska (Table 3). The Southeastern area has the most favorable population per dentist ratio in the State, with 2,418 persons per active dentist. In the South Central area, which contains 54 percent of the population, the persons-per-dentist ratio is 3,670. The Northern area has the least favorable ratio, 8,570 persons for every active dentist.

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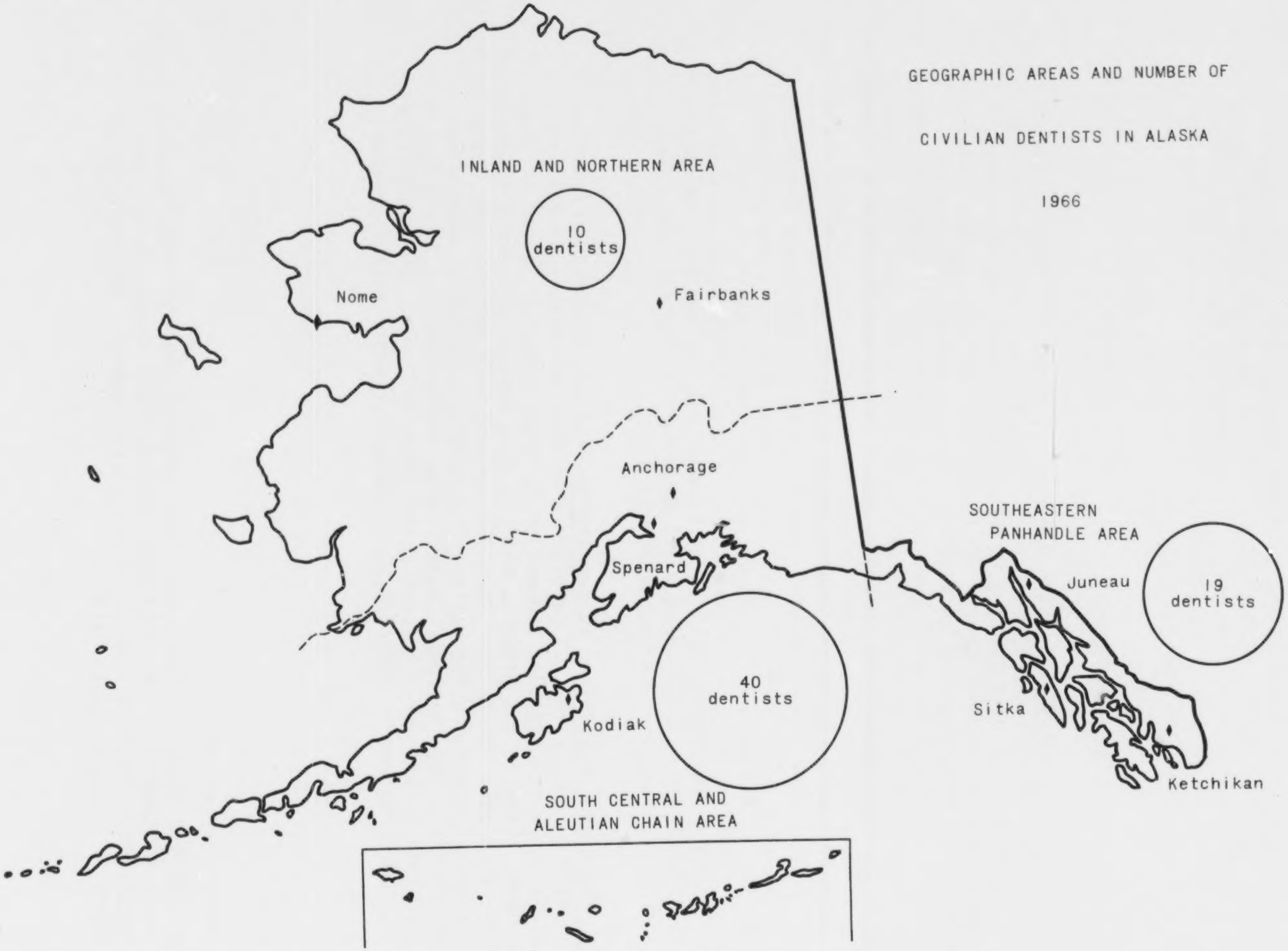
[1] Geographic areas in Alaska have been adapted from the State Economic Areas designated in the following publication: Bogue, D. J., and Beale, C. L. Economic Areas of the United States. New York, Free Press of Glencoe, 1961. 1161 p.


GEOGRAPHIC AREAS AND NUMBER OF

CIVILIAN DENTISTS IN ALASKA

1966

INLAND AND NORTHERN AREA
10 dentists
Nome
Fairbanks
Anchorage
Spenard
Kodiak
40 dentists
SOUTH CENTRAL AND ALEUTIAN CHAIN AREA
SOUTHEASTERN PANHANDLE AREA
Juneau
19 dentists
Sitka
Ketchikan

Table 3.--Number of Persons Per Active Civilian Dentist

Geographic area	Professionally active dentists	Total population*	Persons per active dentist
Total	67	273,600	4,084
South Central and Aleutian Chain area	40	146,800	3,670
Southeastern Panhandle area	17	41,100	2,418
Inland and Northern area	10	85,700	8,570

* Copyright 1965, Sales Management Survey of Buying Power.

The above persons-per-dentist ratios underestimate the actual dental force available to the residents of Alaska because dental care is available to approximately 30 percent of the State's population through the services of dentists employed by the Federal Government. The Public Health Service, Division of Indian Health, operates dental care facilities for Alaska Natives[1/], who constitute about 19 percent of Alaska's total population. Military personnel stationed in Alaska, accounting for another 11 percent of the State's population, are provided dental care by the Armed Services. Dentists on duty with the Public Health Service and the Armed Forces are not required to be licensed in the State in which they are assigned and therefore are not likely to be included in this survey.

Adjustment of Alaska's population to exclude an estimated 52,000 Alaska Natives and 30,000 military personnel results in a more favorable persons-per-dentist ratio of 2,850 for the State. Although precise area population data are not available, this adjustment is known to affect the persons-per-dentist ratios in all three geographic areas. In the Northern and Southeastern areas of the State,the Alaska Native population accounts for one-third and one-fourth of the total inhabitants, respectively.

The South Central area, containing the Alaska Defense Command at Anchorage and other large military installations, has a substantial share of the State's military population. Consequently, the persons-per-dentist ratio in each of the three geographic areas is actually more favorable than shown in Table 3.

[1/] Alaska Natives include Indians, Eskimos and Aleuts.

Practice Characteristics

Hours worked per week.--All dentists reporting on their professional activity in Alaska last year indicated that they provided care for patients. Those dentists reporting time spent in patient care worked an average of 41.0 hours per week. About one-fourth of these dentists worked exceptionally long hours, 48 or more. In contrast, 30 percent of the respondents devoted 35 hours or less per week to patient care.

Use of auxiliaries.--About nine in every 10 practicing dentists in Alaska reported employment of some type of auxiliary personnel (Table 4). The dental assistant, the most frequently utilized auxiliary, is employed by 82 percent of the dental practitioners. Although employed with considerably less frequency, dental hygienists and secretaries are each employed by a rather sizeable proportion, one-third, of the practitioners. Less than one-sixth of all practitioners reported employment of a dental laboratory technician.

Table 4.--Dental Practitioners Employing One or More Auxiliaries, by Type of Auxiliary

Type of auxiliary	Number of practitioners	Percent of practitioners
Total	67	100
With one or more auxiliaries	60*	90*
With assistant	55	82
With hygienist	22	33
With laboratory technician	10	15
With secretary or receptionist	22	33
With other type of personnel	3	4
With no auxiliary	7	10

* Individual items add to more than total because some dentists employ more than one type of auxiliary.

By far the majority of dentists employing dental assistants or secretaries do so on a full-time basis. On the other hand, most of the dental hygienists and laboratory technicians are part-time employees. Fourteen practitioners reported vacancies for auxiliary personnel, usually for assistants or hygienists.

Limited practices.--Seven of the reporting dentists in Alaska limit their practice to a dental specialty, most frequently orthodontics or oral surgery. Five of these dentists are located in the South Central area of the State.

Out-of-State Civilian Dentists

Alaska licenses are maintained by at least 37 civilian dentists located in 14 States. Almost one-third of these out-of-State dentists practice in California. Washington and Oregon are the only other States in which as many as four out-of-State respondents are located. Nine of the out-of-State dentists practiced in Alaska prior to assuming their present location.

April 1967.

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DENTISTS LICENSED IN ARIZONA

Of the 926 dentists who registered with the Arizona State Dental Board in 1965, 846 completed the survey questionnaire, resulting in a response rate of 91 percent (Table 1). Only 61 percent of these respondents were civilian dentists actually located in Arizona. Another thirty-three percent were civilians located in other States, and four percent were on active duty with the Armed Forces. There were only three women dentists included among the respondents, two of them located within the State.

Table 1.--Location and Military Status of Dentists Licensed in Arizona

Location and military status	All dentists	Percent of dentists
Total	926	100
Respondents	846	91
Nonrespondents	80	9
Respondents	846	100
Civilians in Arizona	519	61
Civilians in another State	276	33
On active duty with Armed Forces	34	4
Not reported	17	2

Eighty-five percent of the dentists who responded to the survey hold a license in at least one other State. About four out of five civilian dentists located in Arizona are licensed in one or more additional States--62 percent in one other State and only 17 percent in 2 or more other States. By comparison, 43 percent of the out-of-State civilian dentists hold licenses in at least two States in addition to Arizona.

Respondents hold over 1,800 licenses, an average of more than two per dentist. About 30 percent of the out-of-State licenses are held in California, and an additional 20 percent are maintained in other Western States. The remaining half of the out-of-State licenses are held in 33 other States scattered across the Nation.

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Civilian Dentists in Arizona

Sources of Supply

Dental schools.--Arizona's dentists graduated from 41 dental schools, including 2 schools (Colorado College and Denver College) which are no longer in existence. Over the years, 16 schools located in the North Central States have been a major source of dentist supply, contributing over one-half of the State's dentists (Table 2). Moreover, the relative contribution of these schools has tended to increase slightly in recent years. While no one school in this part of the country has been an outstanding contributor, three universities in Illinois--Northwestern, Illinois, and Loyola, and three universities in Missouri--Washington, St. Louis, and Missouri at Kansas City, have together trained over one-fourth of the State's dentists. Five other universities in the North Central States--Minnesota, Marquette, Iowa, Creighton, and Nebraska--have each contributed at least 15 dentists to the State's present supply.

Table 2.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	519[1]	-	220	184	99
North Central	282	55	57	56	51
Northwestern	43	8	10	8	7
Missouri (Kansas City)	31	6	4	8	6
Minnesota	30	6	4	7	9
Illinois	25	5	3	9	3
12 other schools	153	30	36	24	26
West	139	27	21	27	39
Southern California	68	13	5	14	29
8 other schools	71	14	16	13	10
South	72	14	20	12	4
Baylor	39	8	14	3	1
9 other schools	33	6	6	9	3
Northeast (6 schools)	21	4	2	5	6

[1] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item (see Appendix Table A).

Another one-fourth of the State's dentists received their dental degrees from schools in the West. This area's outstanding contributor, the University of Southern California, has supplied 13 percent of Arizona's dentists. Three other schools in the West--Oregon, Pacific (Physicians and Surgeons), and California at San Francisco--have contributed an average of 16 dentists each. The proportionate contribution of Southern California has decreased considerably over earlier years, dropping from 29 percent of all dentists in Arizona who received dental degrees prior to World War II to only 5 percent of those who graduated since 1955.

Schools in the South have contributed 14 percent of the dentist supply, with Baylor University the largest Southern contributor. The increasingly important role of Baylor as a source of dentist supply for the State is demonstrated by the fact that 14 percent of Arizona's dentists who graduated during the last 10 years received their dental education at this school, compared to only 1 percent of those graduating prior to World War II.

Dentists relocating in Arizona.--One in every three dentists now in Arizona first practiced dentistry in one of 34 other States. The largest share of the 175 in-migrants, 19 percent, came from California. Illinois, Minnesota, and Iowa, the three next largest sources of in-migrants, have together supplied one-fourth of the dentists relocating in Arizona. No other State has contributed as many as 10 dentists to the Arizona supply; however, five States--Texas, New Mexico, Washington, Pennsylvania, and Michigan--have each contributed more than five dentists.

Personal Characteristics

Age.--Dentists in Arizona are very young. Their median age in 1965 was 40.1 years, with almost a third under 35 and fully two-thirds under 45 years of age (Table 3). Only 16 percent were 55 or older, including 6 percent who had reached the age of 65.

Table 3.--Age Distribution

Age	Number of dentists	Percent of dentists	Cumulative percent
Total	519	100	-
Under 30	33	7	7
30 - 34	122	24	31
35 - 39	93	19	50
40 - 44	79	16	66
45 - 49	54	11	77
50 - 54	37	7	84
55 - 59	28	6	90
60 - 64	22	4	94
65 - 69	17	3	97
70 & over	13	3	100

Advanced training.--About 18 percent of all dentists in Arizona have received a year or more of advanced training. One of every ten dentists reported he had taken advanced clinical training as an intern or resident. A larger proportion, about 13 percent, completed at least one year of advanced academic training as graduate or postgraduate students, including 9 percent who earned a master's degree after leaving dental school. About 5 percent of all dentists in the State said they had both clinical and academic advanced training.

Distribution and Current Status

Distribution of dentists.--Eighty-five percent of the dentists in Arizona are located in the State's two metropolitan areas, 62 percent in Phoenix (Maricopa County) and 23 percent in Tucson (Pima County). The remaining 15 percent are in the 12 nonmetropolitan counties in the State (Table 4). Grouping the nonmetropolitan counties by population of the largest central city within each county shows that the number of dentists in a county generally declines as the population of the central city decreases (see Appendix Table B). Of the four counties with central cities having a 10,000-24,999 population, Coconino is the only county with as many as 15 dentists; Yavapai, Cochise, and Yuma each have between 8 and 12 dentists. None of the four counties having a central city population from 5,000-9,999 has as many as 10 dentists. Of the four counties with central cities under 5,000 only one county has more than 3 dentists. Two counties, Greenlee and Santa Cruz, have no reporting dentists; however, both of these counties are served by practitioners who maintain secondary offices--one in Greenlee and two in Santa Cruz.

Table 4.--Distribution by County Group

County group	Number of counties	Number of dentists	Percent of dentists
All counties	14	519	100
Metropolitan areas	2	439	85
Phoenix area	1	319	62
Tucson area	1	120	23
Nonmetropolitan county groups	12	78	15
Central city 10,000-24,999	4	46	9
Central city 5,000-9,999	4	24	5
Central city under 5,000	4	8	1

About 8 percent of Arizona's dentists maintain a second office, usually in the same county as the primary office location. Although the majority of secondary offices are located in either the Phoenix or Tucson metropolitan areas, eight nonmetropolitan counties had one or more secondary dental offices. In addition to Greenlee and Santa Cruz, the counties with secondary dental offices were Gila (four offices) and Yavapai, Yuma, Navajo, Pinal, and Apache (one office each).

Professional status.--Nearly all of the dentists in Arizona (97 percent) reported that they were active in the profession. Only nine of the 519 responding dentists said they were professionally inactive, including eight who were fully retired and one who was engaged in nondental employment. Another seven failed to report their current status. Among the 30 dentists 65 years old or over, only a fifth regarded themselves fully retired.

Active dentists in relation to population.--Based on reporting dentists, there was one professionally active dentist for every 3,203 persons in Arizona in 1965 (Table 5). In metropolitan areas, the ratio was one dentist for every 2,799 persons compared to one for every 5,543 persons in nonmetropolitan counties. On an individual county basis, the range in the number of persons per dentist varied widely (Appendix Table C). Among the 12 counties known to have dentists, Yavapai County had the most favorable ratio, with one professionally active dentist for every 2,642 persons. At the opposite end of the scale was Apache County with a ratio of 32,000 persons per dentist.

Table 5.--Distribution of Professionally Active Dentists

County group	Professionally active dentists	Civilian population	Persons per dentist
All counties	503	1,611.0	3,203
All metropolitan areas	425	1,189.7	2,799
Phoenix area	309	865.0	2,799
Tucson area	116	324.7	2,799
Nonmetropolitan county groups	76	421.3	5,543
Central city 10,000-24,999	46	203.9	4,433
Central city 5,000-9,999	23	151.6	6,591
Central city under 5,000	7	65.8	9,400

Only four counties in the State had dentist-population ratios as favorable as the State average of 3,203. Closely following Yavapai, the metropolitan counties of Maricopa and Pima and the nonmetropolitan county of Mohave each had relatively favorable ratios of about 2,800 persons per dentist. Two counties in the State, Coconino and Gila, had population-per-dentist ratios only slightly higher than the State average, 3,400 and 3,771, respectively. The remaining six counties with reporting dentists had ratios of 4,800 persons or more per dentist. In addition to Apache, these counties were Graham (4,800), Navajo (5,288), Cochise (6,000), Yuma (6,900), and Pinal (8,938).

The number of active dentists available to the residents of some of the counties may be understated. For example, Apache County, with only one civilian dentist for a population of 32,000 persons, has a population which is 75 percent Indian. Since dentists employed by the Federal Government in such agencies as the Public Health Service, Division of Indian Health, are not required to be licensed in the State in which they are assigned, there are undoubtedly more dentists caring for residents of this county than the survey figures indicate. A larger dental force than is indicated by the survey data is also likely in other counties with large Indian populations, such as Navajo (51 percent Indian) and Coconino (28 percent Indian).

Professional Characteristics

Current employment.--As might be expected, most dentists who are active in the profession are in private practice. Of the 503 professionally active dentists located in Arizona, 96 percent are primarily self-employed and another 1 percent are employed by other dentists. The remaining 3 percent are engaged in other dental employment, such as working for a State or local government agency.

Only 38 dentists, or 8 percent of those professionally active, reported a secondary dental employment. All but two of these dentists are located in the Phoenix or Tucson metropolitan areas. A variety of secondary activities were reported, such as part-time employment in the private practices of other dentists, and employment in governmental or voluntary agencies.

Activity last year.--Almost all (about 98 percent) of the dentists reporting on their professional activity in Arizona last year indicated that they had provided care for patients. Dentists reporting on time spent last year in providing patient care devoted an average of 47.4 weeks to this activity and worked an average of 40.2 hours per week. Almost two-thirds spent at least 40 hours per week at this activity for 48 weeks or more during the year (Table 6). About one dentist in seven worked the equivalent of six days a week (48 hours or more) for at least 48 weeks.

Table 6.--Time Spent in Patient Care Last Year

Weeks spent in patient care	Dentists providing patient care	Percent distribution by work week				
		48 hrs. or more	41-47 hrs.	40 hrs.	35-39 hrs.	Under 35 hrs.
Total	100	16	15	43	14	12
50 weeks or more	45	10	6	22	4	3
48-49 weeks	35	4	7	14	6	4
Less than 48 weeks	20	2	2	7	4	5

The amount of time worked last year by dentists in private practice declined sharply with age. Over 70 percent of the dentists under 40 reported they worked at least 40 hours per week for 48 weeks or more. The proportion working this amount of time declines to 55 percent for dentists between 40 and 54 years old, to 42 percent among those 55 to 64, and to only 15 percent for those 65 and over.

Limited practices.--Seventy-four dentists in Arizona, about one in seven, reported that they limit their practice to a dental specialty. Orthodontics is the principal area of specialization, accounting for about six percent of all practitioners. Another four percent limit their practices to oral surgery, 2 percent to pedodontics, and 3 percent to such specialties as periodontics, prosthodontics, and endodontics.

Ninety-three percent of the limited practitioners are located in the Phoenix and Tucson metropolitan areas. Only five dentists in the nonmetropolitan counties reported a limited practice.

Use of auxiliaries.--Almost nine of every ten practitioners reported that they employ auxiliary personnel (Table 7). Dental assistants, the most frequently employed auxiliary, are utilized by 84 percent of all practitioners, including 76 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 38 percent of the dentists with about three-fifths of these dentists utilizing such personnel full time. Only 22 percent of the dentists employ dental hygienists and 10 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Table 7.--Dental Practitioners Employing One or More Auxiliaries, By Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time personnel
Total	497	100	82	7
With one or more auxiliaries	441	89	82	7
With assistant	417	84	76	8
With hygienist	107	22	6	16
With laboratory technician	52	10	2	8
With secretary or receptionist	190	38	23	15
With other type of personnel	14	2	1	1
With no auxiliary	56	11	-	-

Although dentists in the Phoenix and Tucson metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan areas, the use of hygienists is much more common in these counties than in the remainder of the State. About 24 percent of the dentists in Phoenix and 21 percent in Tucson reported the employment of a hygienist, compared with only 12 percent of the dentists located elsewhere.

About one out of six dental practitioners in Arizona reported one or more vacant positions for auxiliary personnel. Vacancies were reported most frequently for dental hygienists and dental assistants.

Out-of-State Civilian Dentists

There are at least 276 dentists in 28 other States who maintain licenses in Arizona. More than one-half of these out-of-State dentists are located in adjacent States with 45 percent in California and another 10 percent in Utah, New Mexico, Colorado and Nevada. The remaining 45 percent of the out-of-State respondents are located in 20 other States, primarily Illinois, Texas, and Washington.

About one in every eight of the out-of-State respondents reported they had formerly been professionally active in Arizona. Nearly half of these out-migrant dentists are presently located in the neighboring State of California.

May 1967.

Appendix Table A.--Summary Statistics for Arizona

	Number of dentists
Total dentists licensed in Arizona	926
Respondents -- total dentists participating in survey (number not reporting current location or military status - 17)	846
Civilian dentists in Arizona[1] (designated simply as "dentists" in text tables)	519
(number not reporting: age - 21, county location - 2, principal current employment - 7, dental school attended - 5)	
Professionally active dentists[2]	503
In limited practice[3]	74
Dental practitioners[4]	497
Located in Arizona last year:	
Reported professional activity[5]	456
Dentists providing patient care[6]	446
Reported time spent in patient care[7]	382
Dentists in private practice[8]	412
Reported time spent in practice[9]	366
Civilian dentists in another State	276
Dentists on active duty in Armed Forces	34
Nonrespondents -- licensed dentists not participating in survey	80

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[1] All responding dentists who currently work in Arizona (excluding those in the Armed Forces) or who are retired and currently live in the State.

[2] All active civilian dentists currently in Arizona -- excludes 8 dentists who are fully retired, 1 who is engaged principally in a nondental activity and 7 who did not report their principal current employment.

[3] Dentists who reported they limited their practice to a dental specialty.

[4] All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

[5] Dentists located in Arizona last year who indicated type(s) of activity in which they engaged.

[6] All dentists who engaged in patient care last year, either as a primary or secondary activity.

[7] Dentists reporting both hours and weeks spent in patient care last year.

[8] Dentists who reported they were primarily self-employed both currently and last year.

[9] Dentists reporting both hours and weeks spent last year as a self-employed dentist.

Appendix Table B.--Arizona Counties by County Group

Metropolitan Areas[1]

Area and County	Number of responding civilian dentists
Phoenix area	
Maricopa	319
Tucson area	
Pima	120

Nonmetropolitan Counties[2]

Area and County	Central city	Number of responding civilian dentists
Central city 10,000-24,999		
Cochise	Douglas	11
Coconino	Flagstaff	15
Yavapai	Prescott	12
Yuma	Yuma	8
Central city 5,000-9,999		
Gila	Globe	7
Navajo	Winslow	8
Pinal	Casa Grande	9
Santa Cruz	Nogales	-
Central city under 5,000		
Apache	McNary	1
Graham	Safford	4
Greenlee	Clifton	-
Mohave	Kingman	3

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[1] Arizona counties included in the latest 1966 definition of Standard Metropolitan Statistical areas established by the United States Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data.

[2] Counties not included in SMSA's by definition have been grouped according to the 1960 population of the largest (central) city within each county.

Appendix Table C.--County Data

County	Profes-sionally active dentists	Population (in 000's)[1]	Persons per dentist	Number of active dentists		
				By age		Reporting use of auxiliaries
				Under 35 years	55 years or more	
All counties	503	1,611.0	3,203	155	69	441
Apache	1	32.1	32,000	-	-	1
Cochise	11	66.0	6,000	4	4	9
Coconino	15	51.0	3,400	3	1	12
Gila	7	26.4	3,771	2	2	7
Graham	3	14.4	4,800	1	-	3
Greenlee	-	10.9	-	-	-	-
Maricopa	309	865.0	2,799	100	39	275
Mohave	3	8.4	2,800	-	1	2
Navajo	8	42.3	5,288	2	1	7
Pima	116	324.7	2,799	34	17	99
Pinal	8	71.5	8,938	4	1	7
Santa Cruz	-	11.4	-	-	-	-
Yavapai	12	31.7	2,642	4	3	11
Yuma	8	55.2	6,900	-	-	8

[1] Copyright 1965, Sales Management Survey of Buying Power; further reproduction is forbidden.

DENTISTS LICENSED IN ARKANSAS

During the 1965 registration period, 861 dentists registered with the Arkansas State Board of Dental Examiners. Seventy percent of the registered dentists were civilians located in Arkansas, 25 percent were civilians located in other States, and 5 percent were on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Arkansas

Location and military status	All dentists	Percent of dentists
Total licensed	861	100
Respondents	738	86
Nonrespondents	123	14
Total licensed	861	100
Civilians in Arkansas	602	70
Respondents	526	-
Nonrespondents	76	-
Civilians in another State	217	25
On active duty with Armed Forces	41	5
Not reported	1	*

* Less than one-half of one percent.

The survey questionnaire was completed by 738 dentists, 86 percent of the total registered. The data provided by the survey respondents have been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. The information for nonrespondents was obtained from records maintained by the Arkansas State Board of Dental Examiners and from the 1966 American Dental Directory published by the American Dental Association.

Over three-fifths of the survey respondents (62 percent) hold a license to practice dentistry in one or more other States. Forty-five percent of the dentists located in Arkansas have one other license, while only 6 percent have two or more other licenses. The proportion of out-of-State dentists holding multiple licenses is considerably greater; two-fifths hold two or more licenses in addition to their Arkansas license. Almost four-fifths of the licenses held outside the State were issued by adjacent States, including 25 percent in Missouri, 23 percent in Tennessee, 16 percent in Texas, 6 percent each in Louisiana and Oklahoma, and 2 percent in Mississippi.

PROFESSIONAL TRAINING

Almost nine in every ten, 86 percent, of the 602 dentists in Arkansas are graduates of dental schools located in four adjacent States--Tennessee, Missouri, Texas, and Louisiana. The University of Tennessee, the major contributor, has supplied the State with one-third of its dental force. Furthermore, the contribution of this school has increased in recent years, accounting for more than one-half (55 percent) of the dentists graduating since 1955, compared to 22 percent of those who graduated in earlier years.

Dental School Attended and Year of Graduation
for Dentists in Arkansas

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	602 [1]	-	209	210	180
		(Percent distribution by school)			
Schools in adjacent States	518	86	97	83	78
Tennessee	200	33	55	19	25
Missouri (Kansas City)	91	15	18	17	11
Washington (St. Louis)	88	15	12	17	14
Baylor	50	8	6	15	4
St. Louis	42	7	3	8	10
6 other schools	47	8	3	7	14
23 schools in other States	81	14	3	17	22

[1] Dental school attended and year of graduation not available for 3 dentists. Percents based on total for whom data are known.

The University of Missouri and Washington University have each provided 15 percent of the Arkansas dentist supply. Baylor and St. Louis Universities have also made notable contributions, having supplied the State with 8 percent and 7 percent of its dentists, respectively. Three other schools in adjacent States, Loyola University at New Orleans, Meharry Medical College, and Vanderbilt University (whose dental school closed in 1926) have each provided 2 percent of the dental force.

The remaining 14 percent of the Arkansas dentists received their dental degrees from 23 other schools located in more distant States. Only three of these schools--Emory and Northwestern Universities and Loyola University of Chicago--have supplied as much as 2 percent of the State's dentist supply.

DISTRIBUTION OF DENTISTS

Two-fifths of the 602 dentists in Arkansas are located in the five metropolitan areas of the State. The 2-county Little Rock area has 141 dentists, 23 percent of the total dental force. The Arkansas portion of the interstate Fort Smith area has the next largest dental force, 8 percent of the dentists, and the Pine Bluff area, with 5 percent, has the third largest supply. The Arkansas parts of two other interstate areas, Memphis and Texarkana, each have 2 percent of the State's dentists.

Distribution of Arkansas Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	75	602	100
Metropolitan areas	7	240	40
Little Rock-North Little Rock area	2	141	23
Fort Smith area (Ark. part)	2	48	8
Pine Bluff area	1	29	5
Memphis area (Ark. part)	1	12	2
Texarkana area (Ark. part)	1	10	2
Nonmetropolitan counties	68	362	60
Central city 10,000-49,999	9	142	24
Central city 5,000-9,999	16	103	17
Central city 2,500-4,999	19	79	13
Central city under 2,500	24	38	6

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

Three-fifths of the State's dentists (362) are located in the 68 nonmetropolitan counties. The nine counties with central cities of 10,000 or more persons have 142 dentists, almost one-fourth of the State's dental force. Three of these counties--Washington, Union, and Garland--have between 20 and 30 dentists. The 16 counties with central city populations between 5,000 and 9,999 have 103 dentists, one-sixth of the total supply. The remaining 43 counties, with less than 5,000 persons in their central cities, have among them 117 dentists, about one-fifth of all dentists in the State. While only six of these 43 counties have as many as five dentists, 22 counties have fewer than three dentists, including six counties which have no dentists, according to available information.

AGE DISTRIBUTION OF DENTISTS

Dentists in Arkansas are rather young as a group, with a median age of 43.1 years. A full one-fourth of the dentists are under 35, yet an equal proportion are 55 years of age or older, including 13 percent who have reached the age of 65. One-half of all dentists in the State are between 35 and 54, with about one-third between 35 and 44 years of age.

Age Distribution of Arkansas Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent
Total	602 1/	100	-
Under 30	54	9	9
30 - 34	96	16	25
35 - 39	77	13	38
40 - 44	114	19	57
45 - 49	66	11	68
50 - 54	40	7	75
55 - 59	34	6	81
60 - 64	34	6	87
65 - 69	30	5	92
70 - 74	32	5	97
75 & over	17	3	100

1/ Includes 8 dentists for whom age is not available. Percents are based on total for whom age is known.

The age distribution of dentists is similar throughout the State. Dentists located in the five metropolitan areas, with a median age of 42.6 years, are only slightly younger on the average than are those dentists located in nonmetropolitan counties, where the median age is 43.5 years.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 602 licensed dentists in Arkansas,573, or 95 percent, are active in their profession, giving Arkansas one professionally active dentist for every 3,218 persons. In metropolitan areas, there is one dentist for every 2,547 persons, while the nonmetropolitan counties have a considerably less favorable ratio of one dentist for every 3,655 persons.

Number of Persons Per Active Dentist in Arkansas

County group*	Professionally active dentists	Population	Persons per dentist
All counties	573	1,843,900	3,218
Metropolitan areas	226	575,600	2,547
Little Rock-North Little Rock area	133	302,400	2,274
Fort Smith area (Ark. part)	44	102,900	2,339
Pine Bluff area	28	87,200	3,114
Memphis area (Ark. part)	11	51,300	4,664
Texarkana area (Ark. part)	10	31,800	3,180
Nonmetropolitan counties	347	1,268,300	3,655
Central city 10,000-49,999	134	418,500	3,123
Central city 5,000-9,999	101	362,500	3,589
Central city 2,500-4,999	76	288,200	3,792
Central city under 2,500	36	199,100	5,531

* See Appendix Table for individual county data.

Among the metropolitan areas, Little Rock has the best ratio with 2,274 persons per active dentist. The persons-per-dentist ratio of 2,339 for the Arkansas portion of the interstate Fort Smith area (Sebastian and Crawford Counties) is only slightly less favorable. The Pine Bluff area and the Arkansas portion of the interstate Texarkana area (Miller County) have ratios which are considerably higher but still below the average for the State, while the Arkansas portion of the interstate Memphis area (Crittenden County) has the least favorable ratio among the metropolitan areas, 4,664 persons per dentist.

Of the 68 nonmetropolitan counties, 17 have ratios better than the State average, while 19 counties have 5,000 or more persons per dentist, including five with 7,500 or more. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city decreases. The counties with central cities of 10,000 or more population have an average of 3,123 persons per dentist, while counties with fewer than 2,500 inhabitants in their central cities average over 5,500 persons per dentist.

UTILIZATION OF AUXILIARIES

Almost nine out of ten responding dental practitioners in Arkansas (i.e., dentists who spend any time working at the chair) employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of all practitioners, including 78 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 30 percent of the dentists, with almost two-thirds of these practitioners utilizing such personnel full time. Seven percent of the dentists employ dental hygienists and an equal proportion employ laboratory technicians in their practices.

Arkansas Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners Total	With one full-time employee (or more)	With only part-time employees
Total	511 1/	100	84	4
One or more auxiliaries	428	88	84	4
Assistant	405	83	78	5
Hygienist	36	7	4	3
Laboratory technician	38	7	2	5
Secretary or receptionist	145	30	19	11
Other type of personnel	23	4	2	2
No auxiliary	61	12	-	-

1/ Includes 22 dentists who did not report on auxiliary utilization.

Employment of auxiliaries varies with the age of the dentist and is more common among the younger dentists. Almost all (98 percent) of the dentists between the ages of 30 and 44 employ auxiliaries. The proportion utilizing auxiliary personnel decreases to 85 percent for dentists 45 to 64 years of age and to only 38 percent among those 65 and over.

Some 17 percent of the Arkansas practitioners reported one or more vacant positions for auxiliary personnel. Thirty-eight percent of these dentists indicated vacancies for full-time dental hygienists and 24 percent for full-time dental assistants.

OTHER SURVEY FINDINGS

☐ Ninety-nine percent of the responding professionally active dentists in Arkansas are primarily engaged in private practice, with 97 percent self-employed and 2 percent employed by other dentists. The remaining one percent are engaged in other dental activities, such as employment by governmental agencies.

☐ Dentists reporting on time spent in providing patient care devoted an average of 39.7 hours per week to this activity for 48.5 weeks during the year preceding the survey. One in every ten dentists worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ Thirteen percent of the survey respondents reported that they had completed one year or more of advanced training after receiving the dental degree. Twenty-seven dentists reported the completion of advanced clinical training as interns or residents, and 46 dentists had completed a year or more of academic training as graduate or postgraduate students.

☐ About 9 percent of the responding practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics. Almost one in every six of the dentists in metropolitan areas limits his practice, compared to one in every 25 of the dentists in nonmetropolitan counties.

☐ Of the responding dentists who are licensed in Arkansas but located in another State, seven in every ten are located in the adjacent States, mostly in Texas, Tennessee, and Missouri. The remainder of the out-of-State dentists are scattered among 21 other States across the Nation.

October 1968.

APPENDIX TABLE

Selected Data on Dentists in Arkansas, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 or more			
All counties	602	526	76	150	147	573	1,843.9	3,218
Metropolitan areas 2/	240	213	27	58	51	226	575.6	2,547
Little Rock-North Little Rock area	141	124	17	34	28	133	302.4	2,274
Pulaski	134	117	17	32	28	126	271.0	2,151
Saline	7	7	-	2	-	7	31.4	4,486
Fort Smith area (Ark. part)	48	43	5	12	12	44	102.9	2,339
Sebastian	44	39	5	12	10	40	81.3	2,033
Crawford	4	4	-	-	2	4	21.6	5,400
Pine Bluff area	29	26	3	6	7	28	87.2	3,114
Jefferson	29	26	3	6	7	28	87.2	3,114
Memphis area (Ark. part)	12	10	2	3	3	11	51.3	4,664
Crittenden	12	10	2	3	3	11	51.3	4,664
Texarkana area (Ark. part)	10	10	-	3	1	10	31.8	3,180
Miller	10	10	-	3	1	10	31.8	3,180

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Arkansas, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965 Under 35	Age in 1965 55 or more	Professionally active		
Nonmetropolitan counties 3/	362	313	49	92	96	347	1,268.3	3,655
Central city 25,000-49,999	49	37	12	12	16	46	97.0	2,109
Garland	24	20	4	6	8	23	47.8	2,078
Union	25	17	8	6	8	23	49.2	2,139
Central city 10,000-24,999	93	83	10	23	23	88	321.5	3,653
Columbia	7	6	1	1	2	7	25.9	3,700
Craighead	19	16	3	7	3	17	49.5	2,912
Mississippi	14	14	-	3	3	14	73.5	5,250
Ouachita	11	8	3	2	4	10	31.0	3,100
Phillips	9	7	2	-	4	8	44.8	5,600
St. Francis	5	5	-	1	1	5	33.7	6,740
Washington	28	27	1	9	6	27	63.1	2,337
Central city 5,000-9,999	103	89	14	30	23	101	362.5	3,589
Arkansas	7	7	-	1	1	7	23.8	3,400
Ashley	6	6	-	4	-	6	23.9	3,983
Benton	14	12	2	5	3	13	39.1	3,008
Boone	5	5	-	-	2	5	16.3	3,260
Bradley	5	2	3	2	2	4	13.4	3,350
Clark	7	6	1	3	2	7	20.7	2,957
Conway	5	3	2	1	1	5	14.9	2,980
Faulkner	8	7	1	3	2	8	27.7	3,463
Greene	5	5	-	1	2	5	24.3	4,860
Hempstead	4	4	-	1	1	4	18.4	4,600

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Arkansas, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 or more			
Nonmetropolitan counties 3/ (cont'd.)								
Central city 5,000-9,999 (cont'd.)								
Hot Springs	6	6	-	2	1	6	21.2	3,533
Independence	6	5	1	1	-	6	20.5	3,417
Jackson	5	5	-	1	3	5	21.8	4,360
Lee	4	2	2	2	-	4	20.7	5,175
Pope	6	6	-	1	1	6	22.1	3,683
White	10	8	2	2	2	10	33.7	3,370
Central city 2,500-4,999	79	67	12	18	25	76	288.2	3,792
Chicot	8	7	1	2	3	7	18.0	2,571
Clay	4	3	1	1	2	4	20.4	5,100
Cross	4	4	-	1	1	4	18.1	4,525
Dallas	2	2	-	-	-	2	9.8	4,900
Desha	6	6	-	1	3	5	19.9	3,980
Drew	4	4	-	1	1	4	15.3	3,825
Howard	4	4	-	-	2	4	10.3	2,575
Johnson	3	3	-	1	1	3	11.8	3,933
Lafayette	2	1	1	-	1	2	10.1	5,050
Lawrence	5	4	1	-	2	5	16.9	3,380
Little River	2	2	-	1	-	2	8.3	4,150
Logan	4	3	1	2	2	3	15.3	5,100
Lonoke	7	5	2	3	2	7	23.5	3,357
Monroe	3	3	-	1	-	3	17.8	5,933
Nevada	4	2	2	1	1	4	9.7	2,425

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Arkansas, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 or more			
Nonmetropolitan counties 3/ (cont'd.)								
Central city 2,500-4,999 (cont'd.)								
Poinsett	9	8	1	2	3	9	30.2	3,356
Polk	3	2	1	-	-	3	10.8	3,600
Randolph	2	1	1	-	-	2	11.6	5,800
Sevier	3	3	-	1	1	3	10.4	3,467
Central city under 2,500	38	37	1	9	9	36	199.1	5,531
Baxter	2	2	-	-	-	2	9.6	4,800
Calhoun	-	-	-	-	-	-	5.6	-
Carroll	4	4	-	1	1	4	12.0	3,000
Cleburne	5	5	-	1	2	5	8.7	1,740
Cleveland	-	-	-	-	-	-	6.2	-
Franklin	2	2	-	-	1	1	10.1	10,100
Fulton	1	1	-	1	-	1	6.0	6,000
Grant	1	1	-	1	-	1	8.2	8,200
Izard	1	1	-	-	-	1	6.3	6,300
Lincoln	1	1	-	-	-	1	14.7	14,700
Madison	3	2	1	-	-	3	8.9	2,967
Marion	1	1	-	-	-	1	5.3	5,300
Montgomery	-	-	-	-	-	-	4.8	-
Newton	1	1	-	-	-	1	5.0	5,000
Perry	-	-	-	-	-	-	4.7	-
Pike	3	3	-	-	1	3	7.0	2,333
Prairie	2	2	-	1	1	2	19.5	9,750

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Arkansas, by Location

County group and county	Civilian dentists						Population [1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 or more			
Nonmetropolitan counties [3/] (cont'd.)								
Central city under 2,500 (cont'd.)								
Scott	2	2	-	1	1	2	6.4	3,200
Searcy	1	1	-	-	-	1	7.5	7,500
Sharp	-	-	-	-	-	-	5.4	-
Stone	-	-	-	-	-	-	5.8	-
Van Buren	3	3	-	1	1	2	6.9	3,450
Woodruff	1	1	-	-	-	1	13.0	13,000
Yell	4	4	-	2	1	4	11.5	2,875

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2/ Arkansas counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's--Fort Smith, Memphis, and Texarkana--statistics are presented only for dentists located in the Arkansas portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN COLORADO

During the 1965 registration period, 1,735 dentists registered with the Colorado State Board of Dental Examiners. A total of 1,684 dentists responded to the survey, 97 percent of all those registered. Sixty-three percent of the responding dentists are civilians located in Colorado, 29 percent are civilians located in other states, and the remaining 8 percent are on active duty with the armed forces.

Location and Military Status of Dentists
Licensed in Colorado

Location and military status	All dentists	Percent of dentists
Total	1,735	100
Respondents	1,684	97
Nonrespondents	51	3
Respondents	1,684	100
Civilians in Colorado	1,059	63
Civilians in another state	492	29
On active duty with armed forces	133	8

Multiple licensure is fairly common in Colorado, with well over half of the respondents located in the State (57 percent) holding more than one license. Forty-four percent indicated licensure in at least one additional state and 13 percent in two or more other states. Of those dentists registering in Colorado, but located out-of-state, a relatively high proportion--40 percent--are licensed in two or more states other than Colorado.

Survey respondents hold a total of some 3,300 licenses, an average of almost two per dentist. One-third of the licenses held in states outside of Colorado are held in adjacent states, primarily Nebraska and Kansas, with an additional 23 percent maintained in Missouri and California. The remainder are held in 38 other states scattered across the Nation.

PROFESSIONAL TRAINING

Almost three-fourths (72 percent) of Colorado's 1,059 dentists graduated from 16 dental schools located in the North Central States. Three dental schools in the nearby State of Missouri have provided one-fourth of the total dental force, with the University of Missouri, the principal contributor, supplying 19 percent of Colorado's dentists and the dental schools at St. Louis and Washington Universities together supplying another 6 percent. In addition, two schools in adjacent Nebraska, the University of Nebraska and The Creighton University, have trained 21 percent of Colorado's dentists. The only other school in the North Central States to contribute more than 5 percent of the dental force is Northwestern University. The College of Dentistry, University of Denver, although closed since 1930, has provided another 18 percent of the State supply.

The University of Denver provided almost three-fifths (58 percent) of the dentists in Colorado who graduated prior to World War II. However, the loss of graduates from this school has been largely compensated for by contributions from schools in the North Central States.

Dental School Attended and Year of Graduation
for Dentists in Colorado

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	1,059	-	371	354	334
		(Percent distribution by school)			
Schools in North Central States	768	72	88	88	39
University of Missouri	198	19	20	25	10
University of Nebraska	128	12	16	16	4
The Creighton University	92	9	14	8	4
Northwestern University	78	7	7	9	6
University of Iowa	44	4	4	4	4
University of Minnesota	40	4	2	4	5
10 other schools	188	17	25	22	6
University of Denver (extinct)	193	18	-	-	58
24 schools in other states	98	10	12	12	3

Some 19 percent of the survey respondents, 204 dentists, reported that they had completed one year or more of advanced training after receiving their dental degree. Of the 116 with advanced clinical training, 31 completed a residency and 85 an internship. Among the 128 dentists who reported advanced academic training, 79 earned a master's or other advanced degree, and another 49 received no additional degrees but completed one or more years of postgraduate study. These figures include 40 dentists who completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

More than three-fourths (77 percent) of all licensed dentists in Colorado are located in the 3 metropolitan areas of the State. The 5-county Denver area has 683 dentists, 64 percent of the 1,059 dentists in the State. Denver County alone has 432 dentists, while the remaining 4 counties in the area--Adams, Arapahoe, Boulder and Jefferson--each have between 40 and 90 dentists. The Colorado Springs metropolitan area has the second largest dental force, accounting for 9 percent of the State supply. The remaining metropolitan area, Pueblo, has approximately 4 percent of the dentists.

Distribution of Colorado Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	63	1,059	100
All metropolitan areas	7	820	77
Denver area	5	683	64
Colorado Springs area	1	91	9
Pueblo area	1	46	4
Nonmetropolitan counties	56	239	23
Central city 10,000-49,999	6	122	12
Central city 2,500- 9,999	16	82	8
Central city under 2,500	34	35	3

*See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Slightly less than one-fourth (23 percent) of the dentists are located in the 56 nonmetropolitan counties of the State. More than half of these dentists are concentrated in the six counties with at least 10,000 persons in their central cities--Larimer, Weld, La Plata, Las Animas, Logan and Mesa. The number of dentists per county generally declines as the size of the central city decreases. There are 82 dentists in the 16 counties having between 2,500 and 9,999 persons in their central cities, while less than half that number (35 dentists) are scattered throughout the 34 counties with central cities of less than 2,500 population. Among these latter very sparsely populated counties, 14 with a combined population of 29,800 had no dentist reporting, while 10 other counties had only 1 dentist per county.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of the 1,057 dentists who reported their age was 42.3 years. Approximately one-fourth (274) of Colorado's dentists are under 35, and 28 percent (302) are 55 years of age or more. One in every six, or 186 dentists, is 65 years old or over, including 127 who have reached the age of 70.

Median Age and Age Distribution of Colorado Dentists, by County Group

County group	Median age	Percent of dentists			
		Under 35	35-44	45-54	55 & over
All counties	42.3	26	33	13	28
All metropolitan areas	41.8	26	35	12	27
Denver area	42.1	24	35	13	28
Colorado Springs area	40.3	30	36	12	22
Pueblo area	40.7	37	26	9	28
All nonmetropolitan counties	44.1	26	27	14	33
Central city 10,000-49,999	44.6	24	28	15	33
Central city 2,500- 9,999	40.7	29	28	15	28
Central city under 2,500	52.5	26	20	6	48

In metropolitan areas the median age of dentists is 41.8 years, more than two years younger than the 44.1 year median for dentists in the nonmetropolitan counties. In two of the three metropolitan areas, Colorado Springs and Pueblo, the median ages are almost the same, 40.3 and 40.7, respectively. By contrast, the median age in the Denver area is 42.1 years, approximately the same as the average for the State. However, dentists in Denver County itself--the hub of the Denver metropolitan area--have a median age of 45.1 years, considerably older than that of dentists in the four surrounding counties, where the combined median age is 38.0 years.

Among the nonmetropolitan county groups, counties with central cities of less than 2,500 persons have the oldest dentists, with a median age of 52.5, about 10 years higher than the median age for the State as a whole. By comparison, the combined median age in counties having central cities with more than 2,500 inhabitants is a much lower 43.7 years.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,059 responding dentists in Colorado, 95 percent (1,007 dentists) are active in their profession, giving Colorado one professionally active dentist for every 1,972 persons. In the metropolitan areas--which have 78 percent of all active dentists and 70 percent of the population--the ratio is one dentist for every 1,780 persons. The remainder of the State--which has 22 percent of the active dentists and 30 percent of the population--has a less favorable ratio of one dentist for every 2,647 persons.

Number of Persons per Active Dentist in Colorado

County group and county	Professionally active dentists	Population	Persons per dentist
All counties	1,007	1,985,400	1,972
All metropolitan areas	784	1,395,200	1,780
Denver area	652	1,087,200	1,667
Colorado Springs area	87	178,900	2,056
Pueblo area	45	129,100	2,869
Nonmetropolitan counties	223	590,200	2,647
Central city 10,000-49,999	118	258,700	2,192
Central city 2,500- 9,999	76	209,000	2,750
Central city under 2,500	29	122,500	4,224

Among the metropolitan areas, the 5-county Denver area has the best ratio with 1,667 persons per dentist. Denver County itself has an even more favorable ratio of 1,291, compared to a combined ratio of 2,300 in the four other counties in the area. In the Colorado Springs area the ratio is 2,056, and in the Pueblo area the number of persons per dentist is a rather high 2,869.

Among the 56 nonmetropolitan counties of the State, there are 8 counties with persons-per-dentist ratios under 2,000, yet 13 counties have ratios exceeding 3,000 persons for every dentist, and another 16 have no reporting active dentists. (In 2 counties, the one reporting dentist is not professionally active.) Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 10,000 or more population have an average persons-per-dentist ratio of approximately 2,200. In contrast, the counties with central cities having less than 2,500 inhabitants average more than 4,000 persons for every active dentist.

UTILIZATION OF AUXILIARIES

Slightly more than 8 of every 10 practitioners in Colorado (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 78 percent of all practitioners, including 72 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 28 percent of the dentists, with half of these dentists utilizing such personnel full time. Dental hygienists are utilized by an almost equal number of dentists, primarily on a part-time basis. Seven percent of the dentists employ dental technicians, principally for part-time assistance.

Colorado Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed by dentists	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time auxiliary (or more)	With only part-time auxiliaries
Total	1,000 1/	100	76	6
One or more auxiliaries	815	82	76	6
Assistant	772	78	72	6
Hygienist	225	23	6	17
Laboratory technician	71	7	2	5
Secretary or receptionist	277	28	14	14
Other type personnel	41	4	1	3
No auxiliary	176	18	-	-

1/ Includes 9 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist and is more frequent among younger dentists. Approximately 92 percent of Colorado dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 77 percent among dentists 45 to 64 years of age, and to 49 percent among dentists 65 years and over. Dentists in the early years of their practice generally do not reach peak utilization of assistants until they are 35 years of age and of hygienists until age 40.

Although dentists in metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan counties, the use of hygienists is much more common in metropolitan areas than in the remainder of the State. A relatively high proportion of dentists in metropolitan areas--26 percent--reported employment of a hygienist, as compared to only 11 percent of dentists located elsewhere.

OTHER SURVEY FINDINGS

- Ninety-eight percent of the professionally active dentists in Colorado are primarily engaged in private practice, with 97 percent self-employed and one percent employed by another dentist. The remaining two percent are either employed by governmental agencies or are engaged in other dental activities, such as taking advanced training.

- Dentists providing patient care in the year prior to the survey devoted an average of 40.3 hours per week to this activity for 47.4 weeks during the year. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

- About 13 percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics, followed by oral surgery and pedodontics. Fourteen percent of the dentists in metropolitan areas limit their practice as compared to 7 percent in nonmetropolitan areas.

- Twenty percent of the dentists responding (208) had practiced as civilian dentists in one of 35 other states immediately prior to assuming their present Colorado location. More than half of these dentists came from the North Central States, primarily Nebraska, Illinois, Kansas and Missouri.

- Thirty-two percent of the 492 dentists licensed in Colorado but located in another state are in one of the seven adjacent states, primarily Nebraska (14 percent). Another 21 percent of the out-of-state dentists are located in California, while the remainder are scattered throughout 32 other states, the District of Columbia, or foreign countries.

December 1967.

APPENDIX TABLE

Selected Data on Dentists in Colorado, by Location

County group and county	Civilian dentists				Population[1/] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes- sionally active		
		Under 35	55 years or over			
All counties	1,059	274	302	1,007	1,985.4	1,972
Metropolitan areas[2/]	820	212	222	784	1,395.2	1,780
Denver area	683	168	189	652	1,087.2	1,667
Adams	43	18	2	41	153.3	3,739
Arapahoe	57	17	6	56	138.8	2,479
Boulder	63	17	12	61	90.7	1,487
Denver	432	84	163	409	528.1	1,291
Jefferson	88	32	6	85	176.3	2,074
Colorado Springs area	91	27	20	87	178.9	2,056
El Paso	91	27	20	87	178.9	2,056
Pueblo area	46	17	13	45	129.1	2,869
Pueblo	46	17	13	45	129.1	2,869
Nonmetropolitan counties[3/]	239	62	80	223	590.2	2,647
Central city 25,000-49,999	73	18	19	69	141.7	2,054
Larimer	41	9	9	38	63.6	1,674
Weld	32	9	10	31	78.1	2,519
Central city 10,000-24,999	49	11	21	49	117.0	2,388
La Plata	8	2	3	8	20.7	2,588
Las Animas	4	1	2	4	19.1	4,775
Logan	7	1	3	7	21.1	3,014
Mesa	30	7	13	30	56.1	1,870

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Colorado, by Location

County group and county	Civilian dentists				Population[1] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or over			
Nonmetropolitan counties[3] (cont'd.)						
Central city 5,000-9,999	50	21	11	47	132.9	2,828
Alamosa	7	4	3	7	10.4	1,486
Fremont	9	4	2	7	20.9	2,986
Huerfano	3	2	1	3	7.7	2,567
Montezuma	2	-	-	2	14.8	7,400
Montrose	7	5	1	7	19.7	2,814
Morgan	8	2	1	8	21.7	2,712
Otero	8	1	2	7	24.2	3,457
Prowers	6	3	1	6	13.5	2,250
Central city 2,500-4,999	32	3	12	29	76.1	2,624
Bent	1	-	1	-	7.3	-
Chaffee	6	1	3	5	8.6	1,720
Delta	5	-	3	5	15.5	3,100
Garfield	8	1	2	7	12.3	1,757
Gunnison	2	-	-	2	5.9	2,950
Lake	2	-	-	2	7.4	3,700
Moffat	3	-	1	3	7.6	2,533
Rio Grande	5	1	2	5	11.5	2,300
Central city under 2,500	35	9	17	29	122.5	4,224
Archuleta	2	-	2	1	2.6	2,600
Baca	1	-	1	1	6.3	6,300
Cheyenne	1	-	1	1	2.6	2,600
Clear Creek	-	-	-	-	2.8	-
Conejos	1	-	1	1	8.6	8,600
Costilla	-	-	-	-	3.8	-
Crowley	-	-	-	-	3.7	-

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Colorado, by Location

County group and county	Civilian dentists				Population[1/] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or over			
Nonmetropolitan counties[3/] (cont'd.)						
Central city under 2,500 (cont'd.)						
Custer	-	-	-	-	1.2	-
Dolores	1	-	1	1	2.0	2,000
Douglas	2	1	-	2	5.6	2,800
Eagle	1	-	1	-	4.8	-
Elbert	-	-	-	-	3.5	-
Gilpin	-	-	-	-	0.7	-
Grand	2	-	1	2	3.5	1,750
Hinsdale	-	-	-	-	0.2	-
Jackson	-	-	-	-	1.7	-
Kiowa	-	-	-	-	2.3	-
Kit Carson	2	2	-	2	6.9	3,450
Lincoln	2	1	-	2	5.1	2,550
Mineral	-	-	-	-	0.4	-
Ouray	3	-	3	1	1.8	1,800
Park	-	-	-	-	1.8	-
Phillips	2	-	1	2	4.3	2,150
Pitkin	1	1	-	1	3.1	3,100
Rio Blanco	4	1	3	3	5.4	1,800
Routt	2	1	-	2	5.7	2,850
Saguache	-	-	-	-	4.4	-
San Juan	-	-	-	-	0.8	-
San Miguel	1	-	-	1	2.9	2,900

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Colorado, by Location

County group and county	Civilian dentists				Population[1] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes- sionally active		
		Under 35	55 years or over			
Nonmetropolitan counties[3] (cont'd.)						
Central city under 2,500 (cont'd.)						
Sedgwick	1	-	-	1	4.0	4,000
Summit	1	1	-	1	2.2	2,200
Teller	-	-	-	-	2.5	-
Washington	1	-	-	1	6.6	6,600
Yuma	4	1	2	3	8.7	2,900

[1] Copyright 1965. Sales Management Survey of Buying Power; further reproduction is forbidden.

[2] Colorado counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

[3] Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN CONNECTICUT

A total of 2,769 dentists registered with the Connecticut Dental Commission in 1966 (Table 1). Of this total, 2,578 completed the questionnaire for an overall response rate of 93 percent. About 70 percent of the responding dentists were civilians located in Connecticut at the time of the survey. Civilians located in other States or abroad accounted for one-fourth of the respondents, and 5 percent were dentists on active duty in the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in Connecticut

Location and military status	All dentists	Percent of dentists
Total licensed	2,769	100
Respondents	2,578	93
Nonrespondents	191	7
Respondents	2,578	100
Civilians in Connecticut	1,799	70
Civilians in another State	647	25
On active duty with Armed Forces	131	5
Not reported	1	*

* Less than one half of one percent.

The location and military status of the dentists not responding to the survey, as well as certain other items of information, were obtained, when available, from records maintained by the Connecticut Dental Commission or from the 1966 American Dental Directory, published by the American Dental Association. However, because the survey response rate was high, the data presented in the sections which follow will be limited to responding dentists except in those instances where the nonrespondent data are known to differ from the respondent data.

Of all the dentists responding, 46 percent are licensed only in Connecticut (Table 2). Among those dentists located in Connecticut, 62 percent are licensed only in this State, 31 percent are licensed in one other State and only 7 percent are licensed in 2 or more other States. In contrast, 32 percent of the out-of-State civilian dentists are licensed in 2 or more States in addition to Connecticut and the State in which they are presently located.

Table 2.--Percent of Dentists Holding Licenses in Other States

Licenses held	All respondents	Civilian dentists		Armed Forces
		In Connecticut	Out-of-State	
Total	100	100	100	100
Connecticut only	46	62	-	49
Licensed in 1 other State	41	31	68	45
Licensed in 2 other States	11	6	25	5
Licensed in 3 or more other States	2	1	7	1

Civilian Dentists in Connecticut

Sources of Supply

Dental schools.--Connecticut's dentists are graduates of 49 dental schools in 24 States, the District of Columbia and Canada. However, four-fifths of the State's dentists are graduates of 14 dental schools located in 5 eastern States--Pennsylvania, Massachusetts, Maryland, New York, New Jersey--and the District of Columbia. Of these schools, Tufts University has made the largest single contribution, having trained 15 percent of the State's total dentist supply (Table 3). As a State, Pennsylvania, whose three dental schools have trained one-fourth of Connecticut's dentists, has been the primary

Table 3.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	1,799[1]	-	430	665	649
		(Percent distribution by school)			
Tufts	263	15	17	16	12
Maryland	260	14	6	12	22
Pennsylvania	232	13	13	13	13
Temple	190	11	14	11	8
Georgetown	179	10	15	9	8
New York	99	6	6	7	3
Columbia	67	4	2	5	3
Harvard	62	3	3	2	6
St. Louis	58	3	4	4	2
40 other schools	382	21	20	21	23

[1] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A.)

source of dentists for Connecticut. The University of Pennsylvania and Temple University dental schools together account for almost all of Pennsylvania's contribution to the Connecticut dentist supply. Two other eastern dental schools at Maryland University and Georgetown University have also contributed as much as 10 percent of the State's dentists. Of the remaining one-fifth of the Connecticut dentist supply, 19 percent were trained in dental schools in more distant States and one percent were trained in 5 Canadian dental schools.

Until World War II the dental school at the University of Maryland was the major training ground for Connecticut's dentists. The postwar decline of this school as a source of Connecticut's dentist supply is reflected in the fact that Maryland graduates account for only one out of every 14 dentists who are graduates of the past 10 years, compared with about one in 5 of those who graduated prior to World War II. This decline has been compensated for by increases from Georgetown, Temple, and Tufts. More than 45 percent of those graduating in the past 10 years are from these schools, as compared with 28 percent of the dentists who graduated prior to World War II.

Dentists relocating in Connecticut.--Of the survey respondents now in Connecticut, 232 reported that they had been professionally active as a civilian in another State or abroad immediately prior to assuming their present Connecticut location. Forty-nine percent of these dentists who have relocated in Connecticut came from the three adjacent States--New York, Massachusetts and Rhode Island. The remaining 51 percent came from 34 other States and the District of Columbia. None of these other States has contributed as many as ten dentists to the Connecticut supply. However, six States--Maryland, Virginia, California, New Jersey, Pennsylvania, and Texas--have each contributed more than five dentists.

Dentists relocating in Connecticut account for 13 percent of the State's total dentist supply. New York and Massachusetts have contributed the largest share of the total, 4 and 2 percent, respectively.

Personal Characteristics

Age.--The median age of reporting dentists in Connecticut was a relatively high 46.4 years. Nevertheless, there was almost an even distribution of the dentist supply in the age groups which generally represent the most active professional years. As the data in Table 4 indicate, the proportion of the total supply in each of the 5-year age intervals between the ages of 30 and 54 ranged only from 12 to 15 percent.

Table 4.--Age Distribution

Age in 1965	Number of dentists	Percent of dentists
Total	1,799	100
Under 30	96	5
30 - 34	223	12
35 - 39	243	14
40 - 44	262	15
45 - 49	227	13
50 - 54	231	13
55 - 59	155	9
60 - 64	122	7
65 - 69	101	6
70 - 74	77	4
75 & over	41	2

About one in 8 of all reporting dentists were 65 years old or over, and in this group were 118 dentists who were 70 years old or over including 41 who had reached the age of 75. Although this is a substantial representation among the respondents of dentists who were well along in years, the supply of older dentists in the State is actually somewhat greater than the survey findings indicate. The median age of dentists not responding in the survey was 51.9 years, or 5 years higher than for the respondents. Moreover, almost one-fourth of the nonrespondents were 65 or older, a proportion twice that among respondents.

Advanced training.--One year or more of advanced training has been completed by at least 536 dentists in Connecticut (Table 5). Although a larger number reported advanced clinical training than academic training, there are 14 reporting dentists who have earned a second doctorate, 56 who have earned a master's degree, and another 160 who have received no additional degrees but have completed one or more years of postgraduate study.

There is a growing tendency among Connecticut dentists to take advanced training after receiving their dental degree. Among dentists under 40 years of age, 35 percent reported that they had completed a year or more of advanced training. This percentage is only slightly higher than that recorded for dentists 40 to 54 years old, but is substantially greater than the 21 percent recorded for dentists 55 and over.

Table 5.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
Total	1,799	100
With advanced training	536	30
Clinical training		
Residency completed	87	5
Internship completed	307	17
Academic training		
Ph.D., M.D., or other doctor's degree	14	1
M.A., M.S., or other master's degree	56	3
Postgraduate 1 year or more (no degree)	160	9
With no advanced training	1,263	70

The differences by age groups are even more striking when academic training is considered. More than one in every 5 dentists under 40 has had a year or more of graduate or postgraduate study, compared to one in every 10 dentists between 40 and 54, and only one in every 17 of those 55 and over. This pattern is less pronounced for clinical training, chiefly because many dentists in the younger age groups are still in the process of completing their internships or residencies.

Distribution and Current Status

Distribution of dentists.--The State has been divided into three regions for the presentation of data on the geographical distribution of dentists in Connecticut. Counties which share a metropolitan area have been grouped in the same region. For purposes of discussion these three regions have been named the Bridgeport-New Haven, Hartford, and New London regions.

The Bridgeport-New Haven region includes New Haven, Fairfield and Litchfield Counties which contain the Bridgeport, New Haven, Waterbury, Stamford, Norwalk and Meriden metropolitan areas. Hartford, Middlesex and Tolland Counties, which contain the Hartford and New Britain metropolitan areas, have been combined to form the Hartford region. Windham County, the only one in the State which does not have a metropolitan area, has been combined with New London County, which contains the New London metropolitan area, to form the New London region.

Connecticut's dentists are concentrated in only three of the State's eight counties (Table 6). Fairfield County alone has slightly more than one-third of the State's total dentist supply; Hartford and New Haven Counties each have about one-fourth of the supply. Because of this concentration, the Bridgeport-New Haven region contains 63 percent of the State's dentists, the Hartford region has 31 percent, and the New London region only 6 percent.

Table 6.--Distribution by Region and County

Region and county	Number of dentists	Percent of dentists
All counties	1,799	100
Bridgeport-New Haven region	1,132	63
Fairfield	616	34
New Haven	446	25
Litchfield	70	4
Hartford region	560	31
Hartford	478	26
Middlesex	53	3
Tolland	29	2
New London region	107	6
New London	82	5
Windham	25	1

There are only slight differences in the average ages of dentists in the three counties which together contain most of the State's dentist supply. The median ages of dentists in Fairfield and Hartford Counties are almost the same--45.2 and 45.8 years, respectively (Table 7). In New Haven County the median age is only slightly higher, 47.2 years. In addition, the distribution of dentists among the age groups in each of these three counties is almost the same.

Among the other five counties in the State age differences are much more pronounced. For example, 38 percent of the dentists in Tolland County, which is in the Hartford region, are under 35 years of age, and only 13 percent have reached the age of 55. The median age of dentists in Tolland County is only 39.4 years. By contrast, Windham County in the New London region has no reporting dentists under age 35, and 48 percent are 55 years old or over, including 30 percent who are at least 65. The median age of dentists in this county is 54.5 years.

Table 7.--Median Age and Age Distribution, by Region and County

Region and county	Median age	Percent of dentists					
		Under 35	35-39	40-44	45-54	55-64	65 & over
All counties	46.4	18	14	15	26	15	12
Bridgeport-New Haven region							
Fairfield	45.2	18	15	17	24	15	11
New Haven	47.2	18	13	14	25	17	13
Litchfield	50.6	9	9	13	34	16	19
Hartford region							
Hartford	45.8	19	15	14	25	14	13
Middlesex	49.0	17	13	12	31	21	6
Tolland	39.4	38	14	7	28	10	3
New London region							
New London	47.7	18	10	14	28	18	12
Windham	54.5	-	13	9	30	18	30

Professional status.--Nearly all dentists reported that they are active in the profession (Table 8). Only 4 percent reported themselves either fully retired or engaged primarily in some type of nondental employment.

Table 8.--Professional Activity Status

Activity status	Number of dentists	Percent of dentists
Total	1,799	100
Active in profession	1,725	96
Inactive in profession	74	4
In nondental employment	6	*
Retired	68	4

* Less than one-half of one percent.

Although a majority of the retired dentists are in the older age groups, relatively few of the older dentists who responded to the survey consider themselves retired. Of the 219 reporting dentists 65 and over, only one-fourth reported themselves fully retired, but the proportion retired increases with age. Only 17 percent of the group 65 to 69 years old and 23 percent of those 70 to 74 years old are retired. In contrast, 44 percent of those 75 and over are no longer professionally active. These proportions may be low, however, since it is probable that a substantial number of the State's retired dentists elected not to return the survey questionnaire.

Active dentists in relation to population.--The dentist supply in relation to the population is more favorable in Connecticut than in most other States. There was one professionally active respondent for every 1,615 persons in the State in 1966 (Table 9).

Table 9.--Number of Persons Per Active Dentist

Region and county	Professionally active dentists	Population[1]	Persons per active dentist
All counties	1,725	2,785,700	1,615
Bridgeport-New Haven region	1,086	1,569,200	1,445
Fairfield	596	722,300	1,212
New Haven	429	716,600	1,670
Litchfield	61	130,300	2,136
Hartford region	538	938,500	1,744
Hartford	459	760,000	1,656
Middlesex	52	98,200	1,888
Tolland	27	80,300	2,974
New London region	101	278,000	2,752
New London	78	205,600	2,636
Windham	23	72,400	3,148

[1] Copyright 1965, Sales Management Survey of Buying Power; further reproduction is forbidden.

The three counties in Connecticut which contain most of the dentist supply also have the greatest number of active dentists in relation to the population. Fairfield County, with only 1,212 persons for every active dentist, has the most favorable county ratio. The number of persons per dentist is not too much greater in Hartford and New Haven Counties--1,656 and 1,670, respectively. In the other 5 counties the persons-per-dentist ratios range from a rather favorable 1,888 in the Hartford region's Middlesex County to 3,148 for Windham County in the New London region. Because the ratios in each of the 3 most populous counties are very favorable, the persons-per-dentist ratios for the Bridgeport-New Haven and Hartford regions, which contain these 3 counties, are considerably more favorable than for the New London region where the most populous county, New London, has 2,636 persons per dentist.

Professional Activity

Current employment.--Almost all of the professionally active dentists in Connecticut are primarily engaged in private practice: 96 percent are self-employed and another 2 percent are employed by practicing dentists. The remaining 2 percent are either employed by governmental agencies or engaged in other dental employment. About one in every eight active dentists reported a secondary dental activity in addition to his principal professional employment. These dentists reported a variety of secondary activities, such as part-time employment in the private practices of other dentists, and in governmental or voluntary agencies.

Activity last year.--All but 6 of the 1,593 dentists who reported on their professional activity in Connecticut last year indicated they had provided care for patients. A few dentists reported more than one type of activity. Teaching in a dental or dental hygiene school was reported by 53 dentists and research activities were reported by 14. Time spent in some other dental activity, such as taking advanced training, was reported by 67 dentists. In terms of total professional time, however, patient care accounted for nearly 99 percent of the time spent in all activities.

Dentists reporting on time spent last year in providing patient care devoted an average of 48.0 weeks to this activity and worked an average of 39.8 hours per week. Slightly more than four-fifths reported spending 48 weeks or more at this activity (Table 10). These dentists spent longer hours providing patient care than did those who worked only part of the year, or less than 48 weeks. Seven of every 10 dentists spending 48 weeks or more in patient care worked 40 or more hours per week, while only 5 in every 10 of those working less than 48 weeks spent as much time per week in providing care.

Table 10.--Time Spent in Patient Care Last Year

Hours spent in patient care	Percent of dentists providing care	Percent distribution by work week		
		50 weeks or more	48-49 weeks	Less than 48 weeks
Total	100	45	36	19
48 hours or more	15	8	5	2
41-47 hours	19	9	7	3
40 hours	32	16	12	4
35-39 hours	20	7	8	5
Under 35 hours	14	5	4	5

Practice Characteristics

Limited practice.--Practices limited to a dental specialty are reported by 228 dentists in Connecticut (Table 11). Orthodontia and oral surgery are the two most frequently reported areas of limited practice. Fairfield County not only has the largest number of limited practitioners, but this count also has a larger proportion of dentists in limited practice than any of the other seven counties in the State.

Table 11.--Limited Practices

County	Dentists with limited practices	Percent of dental practitioners				
		All specialty areas	Ortho-dontia	Oral surgery	Perio-dontia	Other
All counties	228	14	5	5	1	3
Fairfield	98	18	8	5	2	3
New Haven	62	16	5	7	1	3
Hartford	56	13	5	4	1	3
Other 5 counties	12	6	2	2	1	1

Use of auxiliaries.--Seven of every 10 dental practitioners in Connecticut (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel. The utilization of auxiliaries among practitioners in the individual counties varies only slightly. Almost 6 of every 10 practitioners employ at least one auxiliary full time (Table 12).

Table 12.--Dental Practitioners Employing One or More Auxiliaries by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With only part-time personnel	With one full-time employee (or more)
Total	1,706	100	13	57
With one or more auxiliaries	1,138	70	13	57
With assistant	921	56	9	47
With hygienist	370	23	13	10
With laboratory technician	56	4	2	2
With secretary or receptionist	335	20	8	12
With other type of personnel	62	4	2	2
With no auxiliary	498	30	-	-

The dental assistant, the most frequently utilized auxiliary, is employed by 56 percent of the dentists. Dental hygienists are employed by 23 percent of the dentists. By far the majority of the dentists employing assistants do so on a full-time basis, while more than half of those who employ hygienists utilize these auxiliaries only part time. One practitioner in 5 employs a secretary or receptionist in his practice, but only one in 25 employs a laboratory technician.

Auxiliary utilization varies with the age of the dentist (Table 13). The peak utilization occurs among practitioners between the ages of 35 and 44. About 82 percent of the dentists in this age group employ auxiliaries. In contrast, auxiliaries are utilized by only 41 percent of the practitioners 65 years old or over. Among the younger dentists who are just starting their practices, 58 percent report the employment of one or more auxiliaries.

Table 13.--Dental Practitioners Employing Auxiliaries, by Age

Age	Percent of age group		
	With auxiliaries	With assistants	With hygienists
Under 30	58	48	13
30 - 34	79	65	16
35 - 44	82	68	31
45 - 54	68	59	20
55 - 64	60	41	24
65 & over	41	26	14

About 15 percent of the dental practitioners in Connecticut reported one or more vacant positions for auxiliary personnel. Of these dentists, about 36 percent reported vacancies for full-time dental hygienists, and 28 percent reported vacancies for full-time dental assistants. Three-fourths of the dentists reporting a vacancy already employ at least one auxiliary.

Weeks and hours worked.--The data in Table 14 demonstrate the greatly reduced professional activity among older dentists. More than 60 percent of the dentists under 45 years report working at least 48 weeks and at least 40 hours per week. The proportion of dentists who report working this amount of time decreases for each of the older age groups to a very low 28 percent among dentists 65 years or older. Probably an even smaller proportion of all dentists 65 and over actually work this amount of time since about two-fifths of these dentists, including those who are likely to be least active, did not report on time spent in their practices.

Table 14.--Time Spent in Private Practice Last Year, by Age

Age	Dentists reporting time spent in practice		Percent working	
	Number	Percent of total	48 weeks or more 40 hrs/wk or more	Part year or less than 40 hrs/wk
Total	1,260	81	56	44
Under 35	220	90	64	36
35 - 44	411	86	62	38
45 - 54	359	82	55	45
55 - 64	176	72	43	57
65 & over	82	59	28	72

Out-of-State Dentists

Connecticut licenses are maintained by at least 647 civilian dentists located in 33 States and the District of Columbia (Table 15). Three-fifths of the out-of-State dentists are located in two of the three adjacent States, primarily in New York, and to a lesser extent in Massachusetts. New Jersey and Florida are the only other States in which at least 5 percent of the out-of-State dentists are currently located.

Table 15.--Out-of-State Civilian Dentists, by State

Present location	Number of dentists	Percent of dentists
Total	647	100
Adjacent States	401	62
New York	306	47
Massachusetts	84	13
Rhode Island	11	2
Other States	246	38
New Jersey	48	8
Florida	32	5
California	27	4
Maryland	20	3
Pennsylvania	15	2
District of Columbia	13	2
25 other States	91	14

Eight percent of the out-of-State respondents (52 dentists) reported that they had formerly been professionally active in Connecticut. One half of the dentists who have migrated out of Connecticut are now located in adjacent States, primarily New York, and the other half are in 14 more distant States and the District of Columbia.

December 1966.

Appendix Table A.--Summary Statistics for Connecticut

	Number of dentists
All licensed dentists	2,769
Respondents -- total dentists participating in survey	2,578
(number not reporting current location or military status - 1)	
Civilian dentists in Connecticut[1] -- civilian respondents designated simply as "dentists" in text tables	1,799
(number not reporting: age - 21, dental school attended - 7, and year of graduation - 55)	
Professionally active dentists[2]	1,725
Dental practitioners[3]	1,706
In limited practice[4]	228
Located in Connecticut last year:	
Reported professional activity[5]	1,593
Dentists providing patient care[6]	1,587
Reported time spent in patient care[7]	1,288
Dentists in private practice[8]	1,558
Reported time spent in practice[9]	1,260
Out-of-State dentists -- civilian respondents not located in Connecticut	647
Dentists on active duty in Armed Forces	131

1/ All responding dentists who currently work in Connecticut (excluding those in the Armed Forces) or who are retired and currently live in the State.

2/ All active civilian dentists currently in Connecticut--excludes 68 dentists who are fully retired and 6 who are engaged principally in a nondental activity.

3/ All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

4/ Dentists who reported they limited their practice to a dental specialty.

5/ Dentists located in Connecticut last year who indicated type(s) of activity in which they engaged.

6/ All dentists who engaged in patient care last year, either as a primary or a secondary activity.

7/ Dentists reporting both hours and weeks spent in patient care last year.

8/ Dentists who reported they were primarily self-employed both currently and last year.

9/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.

DENTISTS LICENSED IN DELAWARE

During the 1966 registration period, a total of 223 dentists registered with the Delaware State Board of Dental Examiners. A total of 216 dentists responded to the survey, 97 percent of all those registered. More than 9 in every 10 of the responding dentists are civilians located in Delaware, 7 percent are civilians located in other States, and 2 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists Licensed in Delaware

Location and military status	All dentists	Percent of dentists
Total licensed	223	100
Respondents	216	97
Nonrespondents	7	3
Respondents	216	100
Civilians in Delaware	196	91
Civilians in another State	16	7
On active duty with Armed Forces	4	2

Multiple licensure is quite common in Delaware, with two of every three dentists licensed in the State (65 percent) holding more than one license. Of those dentists located in Delaware, 62 percent hold more than one license, with 51 percent licensed in one other State and 11 percent licensed in two or more other States. Among dentists registered in Delaware but located out of State, about one-third hold two or more licenses in addition to their Delaware license.

Almost four-fifths of the out-of-State licenses are held in adjacent States, with 64 percent in Pennsylvania and 15 percent in Maryland and New Jersey. The remainder are held in 15 other States and the District of Columbia.

DENTAL SCHOOL ATTENDED

Almost three-fourths (73 percent) of Delaware's dentists graduated from three dental schools in the neighboring State of Pennsylvania. Temple University, the principal contributor, has supplied more than half (51 percent) of the dental force, while the University of Pennsylvania has provided another 19 percent. The only other school with a significant contribution is the University of Maryland which has graduated 15 percent of Delaware's dentists.

Dental School Attended and Year of Graduation
for Dentists in Delaware

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	196 1/	-	78	64	53
		(Percent distribution by school)			
Temple University	101	51	51	61	41
University of Pennsylvania	37	19	26	14	15
University of Maryland	29	15	5	17	25
Georgetown University	8	4	5	3	4
University of Pittsburgh	5	3	5	2	-
13 other schools	16	8	8	3	15

1/ Year of graduation not available for one dentist.

A fairly substantial proportion of Delaware's dentists are recent dental school graduates. Two-fifths have completed their dental education since 1955, compared to slightly over one-fourth who received their dental degrees prior to World War II. There has been some change in the relative contribution of the various schools to the State's dentist supply. The proportionate contributions of Temple University and the University of Pennsylvania have increased over the years, while that of the University of Maryland has shown a notable decrease.

ADVANCED TRAINING

In Delaware a high proportion of survey respondents--approximately three-fifths, or 120 dentists--reported that they had completed one year or more of advanced training after receiving their dental degrees. The vast majority of these dentists reported advanced clinical training, including 103 who completed internships and an additional 9 who completed residencies. Of 26 dentists who reported advanced academic training, 13 had earned a master's degree and another 13 had received no additional degrees but had completed one or more years of postgraduate study. Eighteen dentists had completed both clinical and academic training.

Advanced Training Completed by Delaware Dentists

Highest level of training completed	Number of dentists	Percent of dentists
Total number	196	100
With advanced training	120	61
With no advanced training	76	39
Clinical training	112	58
Residency completed	9	5
Internship completed	103	53
Academic training	26	14
M.A., M.S., or other master's degree	13	7
Postgraduate 1 year or more (no degree)	13	7

Additional education beyond receipt of the dental degree is more common among dentists in the younger age groups. Of dentists under 40 years of age, 68 percent reported that they had completed some form of advanced training. This percentage is slightly greater, 72 percent, among dentists 40 to 54 years of age. Of the dentists who are 55 or older, however, only 28 percent reported the completion of one or more years of advanced training. Considering internship training alone, 60 percent of the dentists under 40, and 64 percent of the dentists 40 to 54, have completed an internship, compared to 15 percent of the dentists in the older age group.

DISTRIBUTION OF DENTISTS

More than four-fifths, 159, of the 196 responding dentists in Delaware are located in New Castle County, which comprises the Delaware portion of the interstate Wilmington metropolitan area. The remaining one-fifth of the dentists are located in the two nonmetropolitan counties of the State. Of these counties, Sussex County has the largest dental force, 22 dentists, or 11 percent of the State supply, while Kent County, with 15 dentists, has only 8 percent.

Distribution of Delaware Dentists, by County

County	All dentists	Professionally active dentists	Population[1] (in 000's)	Persons per active dentist
All counties	196	195	501.3	2,571
Wilmington area[2]	159	159	346.7	2,181
New Castle County	159	159	346.7	2,181
Nonmetropolitan counties	37	36	154.6	4,294
Sussex County	22	22	78.2	3,555
Kent County	15	14	76.4	5,457

[1] Population estimates, copyright 1965. Sales Management Survey of Buying Power.

[2] Defined by the U.S. Bureau of the Budget as the Delaware part of the interstate Standard Metropolitan Statistical Area of Wilmington.

Almost all, 195, of the dentists in Delaware are active in their profession, giving the State one professionally active dentist for every 2,571 persons. There is one dentist for every 2,181 persons in New Castle County, while the nonmetropolitan counties have a considerably less favorable ratio of 4,294 persons per dentist. Of the nonmetropolitan counties, Sussex County has the best ratio, with 3,555 persons for every dentist. In Kent County, the ratio is substantially less favorable--5,427 persons per dentist.

AGE OF DENTISTS

Dentists in Delaware are rather young, as a group, with a median age of 41.0 years. Approximately one-third of the State's dentists are under 35, while only one-fifth are 55 years of age or over, including just 6 percent who have reached the age of 65. Almost half (46 percent) of all dentists in the State are in the age group 35 through 54, with one-fourth between the ages of 35 and 44.

Age Distribution of Delaware Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent
Total	196	100	-
Under 30	21	11	11
30 - 34	46	23	34
35 - 39	26	13	47
40 - 44	26	13	60
45 - 49	21	11	71
50 - 54	17	9	80
55 - 59	13	7	87
60 - 64	14	7	94
65 - 69	7	4	98
70 & over	5	2	100

Dentists in the Wilmington area (New Castle County) have a median age of 39.5 years, about 6 years younger, on the average, than dentists in the two nonmetropolitan counties, where the median age is 45.8 years. Thirty-seven percent of the dentists in New Castle County are under 35 years of age, and only 16 percent are 55 or older. In contrast, 22 percent of the dentists in the nonmetropolitan counties are under 35, while more than a third (35 percent) are 55 years of age or over.

UTILIZATION OF AUXILIARIES

Well over four-fifths of the dental practitioners in Delaware (i.e., dentists who spend any time working at the chair) report that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 72 percent of the dentists, including 64 percent who employ at least one assistant on a full-time basis. Almost 40 percent of the practitioners employ dental hygienists, most often on a part-time basis. Secretaries or receptionists are employed by 51 percent of the practitioners, with more than three-fourths of these dentists utilizing such personnel full time.

Delaware Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	194 [1/]	100	78	8
One or more auxiliaries	161	86	78	8
Assistant	135	72	64	8
Hygienist	73	39	14	25
Laboratory technician	18	10	4	6
Secretary or receptionist	96	51	40	11
Other type of personnel	11	6	3	3
No auxiliary	27	14	-	-

[1/] Includes 6 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is less common among dentists in the older age groups. Ninety percent of the dentists under 55 years of age reported the employment of at least one auxiliary. The proportion utilizing auxiliaries decreases to 70 percent among dentists 55 to 64 years of age and to 60 percent among dentists 65 and over.

Some 18 percent of the dentists reported one or more openings for auxiliary personnel. Of these dentists, one-third indicated a need for full-time hygienists, and one-fifth reported vacancies for full-time assistants. Almost all of the dentists reporting vacancies already employ at least one auxiliary.

OTHER SURVEY FINDINGS

- Of the 195 professionally active dentists in Delaware, 191, or 97 percent, are engaged in private practice. Ninety-three percent are self-employed and 4 percent are employed by other dentists. The remaining 3 percent are either employed by the State or local government or engaged in other dental activities, such as taking advanced training.

- Ten percent of the active dentists reported at least one part-time dental activity in addition to their principal employment. Employment in State or local health departments was the most frequently reported secondary activity. Teaching at a dental school was the next most frequently reported part-time employment.

- Dentists who reported on time spent in providing patient care during the year preceding the survey devoted an average of 47.8 weeks to this activity and worked an average of 37.7 hours per week.

- About 14 percent of the dental practitioners reported that they limit their practices to a dental specialty, primarily orthodontics or oral surgery. Almost all of the dentists who reported limiting their practice are located in the Wilmington metropolitan area.

- Only 8 percent of the dentists in Delaware have practiced as civilian dentists in another State immediately prior to assuming their present Delaware location. Most of these dentists came from Pennsylvania.

July 1968.

DENTISTS LICENSED IN THE DISTRICT OF COLUMBIA

Of the 975 dentists who registered with the District of Columbia Board of Dental Examiners in 1965, 964 completed the survey questionnaire, resulting in a response rate of 99 percent (Table 1). Only 68 percent of these respondents are civilian dentists who reported their primary office location as Washington, D.C., while another 29 percent are civilians who reported their office location outside the District of Columbia. Two-thirds of this latter group maintain their dental offices in the adjacent states of Maryland and Virginia, the overwhelming majority in counties which constitute the Maryland and Virginia portions of the Washington, D.C. metropolitan area. The other civilian dentists outside the District are located in 24 more distant states, the largest numbers in California, Florida and New York. The remaining three percent of the dentists licensed in the District are on active duty with the armed forces.

Table 1.--Primary Office Location and Military Status of Dentists Licensed in the District of Columbia

Location and military status	All dentists	Percent of dentists
Total	975	100
Respondents	964	99
Nonrespondents	11	1
Respondents	964	100
Civilians in the District of Columbia	655	68
Civilians located elsewhere	275	29
On active duty with armed forces	34	3

Almost 70 percent of the dentists who responded to the survey hold a license to practice dentistry in at least one state in addition to the District of Columbia. Fifty-five percent of the civilian dentists maintaining their dental office in Washington are also licensed in one or more states--37 percent in one state and only 18 percent in two or more states. By comparison, 38 percent of the civilian dentists who hold a license in the District of Columbia, but are currently maintaining their primary office elsewhere hold licenses in at least two states in addition to the District.

Respondents hold over 1900 licenses, an average of almost two per dentist. More than one-half of the licenses outside the District are held in the neighboring states of Maryland and Virginia, and an additional 22 percent are maintained in New York, New Jersey, Pennsylvania and Ohio. The remainder are held in 34 other states and Puerto Rico.

Civilian Dentists in the District of Columbia

Sources of Supply

Dental schools.--Dental schools located in the District of Columbia have trained four-fifths of the District's total dentist supply (Table 2). Georgetown University has made the largest contribution, accounting for more than one-half of the total dental force, while Howard University with a smaller contribution, has trained about one-fourth of the dentists. George Washington University graduated 4 percent of the dentists in Washington, D. C. even though its dental school closed in 1921. The remaining one-fifth of the District's dentists received their dental degrees from 27 schools in other parts of the Nation. Among these schools, the University of Maryland contributed the largest number of dentists, 4 percent of the total supply. The only other schools to contribute as much as 2 percent of Washington's dentists are Temple and Northwestern Universities and the University of Pennsylvania.

Table 2.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	655[1]	-	131	220	295
		(Percent distribution by school)			
Georgetown	344	52	29	62	56
Howard	157	24	55	21	12
Maryland	27	4	2	2	7
George Washington (Extinct)	26	4	-	-	9
Temple	12	2	1	4	1
Northwestern	10	2	1	3	1
Pennsylvania	10	2	1	2	1
23 other schools	67	10	11	6	13

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. For each item where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table.)

One-fifth of the District of Columbia's dentists graduated from dental school within the last 10 years. By comparison 45 percent received their dental degrees in 1940 or earlier. In recent years, Howard University has replaced Georgetown University as the primary source of the District's dentist supply. The contribution of Howard University has increased from 12 percent of the graduates before World War II to 55 percent of those who completed their dental education since 1955.

Dentists relocating in the District of Columbia.--One in every seven responding dentists who currently maintain a dental office in the District of Columbia practiced elsewhere as a civilian dentist immediately prior to assuming his present location. Thirty-four of the 92 in-migrant dentists came from the neighboring states of Maryland and Virginia. Another 12 dentists moved their dental practice to Washington from the State of New York. The remainder came from 22 other states or Puerto Rico. More than one-third of the in-migrants moved their offices to the District during the last 10 years.

Personal Characteristics

Age and sex.--The median age of dentists in Washington, D. C. is 49.7 years. Twenty-seven percent of all dentists are between 35 and 44 years of age, and a full one-fourth are between 45 and 54 (Table 3). The proportion of dentists 55 years of age or older, 37 percent, is more than three times as great as the proportion under 35. Seventeen percent of the total, or 111 dentists, are 65 years old or over, and 68 have reached the age of 70.

Fourteen of the 655 dentists in Washington are women. Because they are so few in number, data are not presented separately for them.

Table 3.--Age Distribution

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	655	100	-
Under 30	23	3	3
30 - 34	51	8	11
35 - 39	69	11	22
40 - 44	102	16	38
45 - 49	86	13	51
50 - 54	81	12	63
55 - 59	63	10	73
60 - 64	66	10	83
65 - 69	43	7	90
70 - 74	44	7	97
75 & over	24	3	100

Advanced training.--Almost two-fifths of the survey respondents, or 246 dentists, reported they had completed one year or more of advanced training beyond their dental degree (Table 4). Of the 188 dentists with advanced clinical training, 46 completed a residency and 142 an internship. Among the 107 dentists who reported advanced academic training, 55 earned a master's or other advanced degree and another 52 received no additional degrees but completed one or more years of postgraduate study. These figures include 49 dentists who completed both clinical and academic training.

Table 4.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
Total	655	100
With advanced training	246	38
Clinical training only	139	21
Academic training only	58	9
Both clinical and academic training	49	8
With no advanced training	409	62

Additional education beyond receipt of the dental degree is more common among dentists in the younger age groups. Even though many dentists under age 40 are still serving internships or residencies, or are taking graduate or postgraduate courses, 45 percent report that they have completed some form of advanced training. This percentage is only slightly greater than the 43 percent reporting advanced training among dentists 40 to 54 years old. It is considerably greater, however, than the 28 percent recorded for dentists 55 years of age and over. The most striking contrast is in the area of academic training. Twenty-two percent of the dentists under 40 have completed a year or more of graduate or postgraduate study, compared with 15 percent of the dentists in the older age groups.

Professional Activity

Current status and employment.--Of the 655 respondents in the District of Columbia, 639, or 98 percent reported that they were active in the dental profession. The other 16 dentists regard themselves as fully retired. Based on this count, there is one professionally active dentist for every 1,252 persons in Washington.

Eighty-four percent of the professionally active dentists are primarily engaged in private practice, with 82 percent self-employed and two percent employed by another dentist (Table 5). Another 8 percent of the District's dentists are on the staffs of the dental schools at Georgetown and Howard Universities. The remaining 8 percent are either employed by the local government or other agencies such as Group Health Association, or are engaged in other dental activities, including advanced clinical or academic training.

Table 5.--Current Employment of Professionally Active Dentists

Type of employment	Principal employment		Secondary dental employment [1]	
	Number employed	Percent	Number employed	Percent of total
Total	639	100	140	22
Self-employed	527	82	42	7
Employed by other dentist	10	2	9	1
Staff of dental school	51	8	51	8
Local government	26	4	8	1
Voluntary agency	-	-	7	1
Other dental employment	25	4	35	5

[1] Individual items add to more than total because some dentists reported more than one type of secondary employment.

More than one in every five active dentists reported one or more secondary dental activities in addition to his principal professional employment. Of the 140 dentists reporting secondary employment, 51 said they had part-time faculty appointments at the local dental schools. Self-employment was reported by 42 dentists as their secondary dental activity, and 9 dentists reported part-time employment in the private practices of other dentists. A variety of other secondary activities were reported, including employment in government or voluntary agencies and providing dental services in clinics or hospitals.

Activity last year.--Of all dentists reporting their professional activity in the District last year, 93 percent said they provided care to patients. These dentists spent 88 percent of the total reported professional time in providing patient care. Sixteen percent of the dentists reported they spent some time in teaching and 3 percent reported some time in research but only 9 percent of the total professional time was spent in these activities. While 6 percent of the dentists spent time in some other dental activity, such as taking additional training, these activities account for only 3 percent of the total professional time.

Weeks and hours worked.--Dentists reporting on time spent last year in providing patient care devoted an average of 46.7 weeks to this activity and worked an average of 37.0 hours per week. About two-fifths of the dentists spent at least 40 hours per week at this activity for 48 weeks or more during the year.

The amount of time worked by dentists in private practice last year declined sharply with age. Almost one-half of the dentists under 40 years of age report working at least 48 weeks and at least 40 hours per week. The proportion working this amount of time declines to 30 percent for those between 55 and 64, and decreases to only 18 percent among those 65 years old or over.

Practice Characteristics

Limited practices.--Among dentists reporting type of practice, 74, or about one in every eight, limit their practices to a dental specialty. Over three-fifths of these dentists reported limiting their practices to one of two specialty areas--35 percent to orthodontics and 27 percent to oral surgery. The next most frequently reported areas of limited practice are periodontics and prosthodontics.

Use of auxiliaries.--About 71 percent of the dental practitioners in Washington (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 6). The majority, 61 percent, of the practitioners employ at least one auxiliary full time, while only 10 percent employ part-time auxiliaries exclusively. Dental assistants are the most frequently employed auxiliary, usually on a full time basis. Approximately 62 percent of the practitioners employ an assistant including 53 percent who do so full time. Secretaries or receptionists are employed by 23 percent of the dentists, and a majority of these dentists employ at least one of them full time. Twenty-one percent of the dentists employ dental hygienists and 7 percent employ technicians. A majority of the dentists who employ hygienists or technicians do so only part time. About 11 percent of the dentists in the District reported one or more vacant positions for auxiliary personnel. Of these dentists, about 45 percent reported vacancies for full-time dental assistants, and 21 percent reported vacancies for full-time dental hygienists.

Table 6.--Dental Practitioners Employing Auxiliaries, By Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners: Total	Percent of dental practitioners: With one full-time employee (or more)	Percent of dental practitioners: With only part-time employees
Total	611	100	61	10
With one or more auxiliaries	426	71	61	10
With assistant	373	62	53	9
With hygienist	128	21	7	14
With laboratory technician	42	7	2	5
With secretary or receptionist	137	23	16	7
With other type personnel	25	4	3	1
With no auxiliary	174	29	-	-

The use of auxiliaries varies with the age of the dentist. Peak utilization--about 86 percent--occurs among practitioners between the ages of 45 and 54. In contrast, auxiliaries are utilized by only 46 percent of the practitioners 65 years old or over. Among the dentists under 35, many of whom are just starting their practices, 68 percent report the employment of one or more auxiliaries.

October 1967.

APPENDIX TABLE: Summary Statistics Used in Text

	Number of dentists
Total dentists licensed in the District of Columbia	975
Respondents -- total dentists participating in survey	964
Civilian dentists in the District[1] (designated simply as "dentists" in text tables)	655
(Number not reporting: age - 3, year of graduation - 9, dental school attended - 2)	
Professionally active dentists[2]	639
Dental practitioners[3]	611
In limited practice[4]	74
Located in the District last year:	
Reported professional activity[5]	603
Dentists providing patient care[6]	560
Reported time spent in patient care[7]	491
Dentists in private practice[8]	493
Reported time spent in practice[9]	426
Civilian respondents not located in the District	275
Dentists on active duty in armed forces	34
Nonrespondents -- licensed dentists not participating in survey	17

1/ All responding dentists who currently work in the District (excluding those in the armed forces) or who are retired and currently live in the District.

2/ All active civilian dentists currently in the District -- excludes 16 dentists who are fully retired.

3/ All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

4/ Dentists who reported they limited their practice to a dental specialty.

5/ Dentists located in the District last year who indicated type(s) of activity in which they engaged.

6/ All dentists who engaged in patient care last year, either as a primary or a secondary activity.

7/ Dentists reporting both hours and weeks spent in patient care last year.

8/ Dentists who reported they were primarily self-employed both currently and last year.

9/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.

DENTISTS LICENSED IN FLORIDA

During the 1965 registration period, 3,303 dentists registered with the Florida State Board of Dental Examiners (Table 1). All but 29 dentists--less than one percent of those registering--completed the survey questionnaire. However, among those responding, only 2,272 dentists, or 69 percent, are actually located in Florida. The remainder--about 1,000 dentists in all--are either out-of-state or serving in the armed services. Approximately 23 percent of the respondents are civilians located in another state or abroad, and another 7 percent are on active duty with the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in Florida

Location and military status	All dentists	Percent of dentists
Total	3,303	100
Respondents	3,274	99
Nonrespondents	29	1
Respondents	3,274	100
Civilians in Florida	2,272	69
Civilians in another state	770	23
On active duty with Armed Forces	214	7
Not reported	18	1

Of all the dentists responding, only 19 percent are licensed solely in Florida (Table 2). The majority--62 percent--are licensed in just one other state, but 16 percent hold licenses in two other states, and 3 percent are licensed in at least three additional states. Taken altogether, the licenses held by respondents number more than 6,600--an average of over two per dentist. All out-of-state dentists, simply by virtue of the fact that they are located in another state while still maintaining a Florida license, are multiple license holders. However, multiple licensure is almost as common among dentists located in Florida as it is among

Table 2.--Percent of Dentists Holding Licenses in Other States

Licenses held	All respondents	Civilian dentists		Armed Forces
		In Florida	Out-of-state	
Total	100	100	100	100
Florida only	19	25	-	23
Licensed in 1 other state	62	60	64	65
Licensed in 2 other states	16	13	27	11
Licensed in 3 or more states	3	2	9	1

those outside the state. Three-fourths of all Florida dentists are licensed in at least one additional state. Sixty percent hold one other license, 13 percent hold two additional and 2 percent hold three or more other licenses.

Civilian Dentists in Florida

Sources of Supply

Dentists relocating in Florida.--One in every 4 dentists now in Florida was located in another state or abroad immediately prior to assuming his present Florida location (Table 3). Dentists have moved to Florida from 41 states and the District of Columbia as well as from Puerto Rico and several foreign countries. The largest number from any one state are from Georgia, but these ex-Georgians represent only about three percent of all dentists in Florida. New York, Ohio, and Illinois, the three next largest sources of in-migrants, have each contributed another two percent of the state's dentist supply.

Although no one state or area accounts for a particularly large proportion of the total, more dentists have come to Florida from other states in the South than from any other region. About 4 in-migrant dentists in every 10 were previously located in another Southern state. Three in 10 have come from states in the North Central region and another 2 were previously located in a Northeastern state. Dentists previously located in the West, together with the few who have come from Puerto Rico and foreign nations, account for about 1 in 10.

Table 3.--In-migrant Dentists

Previous location	Number of dentists	Percent of dentists
Total	2,272	100
Previously located elsewhere	570[1]	25
South	240	11
Georgia	73	3
Tennessee	23	1
South Carolina	21	1
Texas	20	1
10 other states	103	5
North Central	179	8
Ohio	43	2
Illinois	40	2
Michigan	31	1
Indiana	23	1
10 other states	42	2
Northeast	115	5
New York	47	2
Pennsylvania	31	1
New Jersey	20	1
3 other states	17	1
West	22	1
Foreign	14	1
Never located elsewhere	1,702	75

[1] Includes only dentists whose last previous location as a civilian was in another state or abroad. In-migrant dentists who have changed their location within Florida after once having established a practice in the state and non-Floridians whose initial location was Florida are excluded from this count.

Dental schools.--Florida's dentists are graduates of 54 schools, including each of the 46 dental schools in the Nation that graduated dentists in 1964. Seven schools which are now extinct and the University of Quebec in Canada also graduated dentists who are now in Florida.

However, over one-half of all dentists in the state are graduates of schools located in the South (Table 4). Emory has made the largest single contribution, having trained more than one-fourth of the state's dentists. Tennessee,

Table 4.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	2,272[1/]	-	883	879	459
		(Percent distribution by school)			
South	1,280	57	54	61	55
Emory	587	26	18	32	35
Tennessee	121	6	8	4	2
Maryland	116	5	6	5	2
Louisville	87	4	3	5	3
Virginia	69	3	5	2	1
Loyola (New Orleans)	63	3	2	4	2
Alabama	54	2	4	2	-
Howard	48	2	1	3	2
10 other schools	135	6	6	4	8
North Central	596	26	26	28	27
Northwestern	117	5	2	9	7
Ohio State	87	4	5	2	4
Indiana	60	3	1	4	3
Michigan	57	2	4	2	2
Western Reserve	52	2	2	2	3
Illinois	36	2	1	2	2
Marquette	32	1	2	1	1
10 other schools	155	7	8	5	7
Northeast	349	16	19	10	15
Pennsylvania	82	4	5	2	3
New York University	72	3	3	3	3
Temple	70	3	4	2	2
Pittsburgh	66	3	3	2	4
6 other schools	59	3	3	1	4
West	26	1	2	1	2
Canada	8	*	-	*	1

* Less than one-half of one percent.

[1/] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A.)

Maryland and Louisville have also made significant contributions. Another one-fourth of the dentists received their education in schools in the North Central states and 16 percent attended schools in the Northeast. Dental schools in the Western states account for only one percent of the state's dentist supply.

Two-fifths of the state's dentists have been graduated from dental school within the last 10 years. In contrast, only one-fifth are graduates of the years prior to World War II. Within each graduating period, there have been slight changes in the proportion of dentists graduating from schools in each region. Probably the most noteworthy change is the declining role of Emory as a source of dentist supply. A third or more of all dentists in the state who were graduated 10 years ago or earlier received their dental education at Emory. But among graduates of the past 10 years now practicing in Florida, only one-sixth are Emory graduates. Nonetheless, the South as a whole accounts for about the same proportion of recent graduates as it does of those graduating earlier.

In-migrant dentists are less likely to have been educated in Southern dental schools than are nonmigrant dentists (Table 5). Six out of 10 of the nonmigrant dentists were graduated from Southern dental schools, whereas these same schools trained only 4 out of 10 of the in-migrant dentists. More than one-third of the in-migrants received their dental education in schools in the North Central states and most of the remainder (about one-fifth) attended schools in the Northeast. However, declining proportions of the in-migrant dentists have come from these two regions. The majority of all recently graduated dentists who have moved to Florida after having once been located in some other state are dentists who were graduated from schools in the South.

Table 5.--Year Dental Degree Awarded Nonmigrant and In-migrant Dentists, by Location of Dental School

Year of graduation	Number of dentists	Percent of dentists			
		South	North Central	Northeast	West
Nonmigrants	1,702	61	23	14	1
After 1955	889	54	25	20	1
1941 - 1955	459	71	22	6	1
1940 & earlier	309	68	18	11	3
In-migrants	570	42	37	19	1
After 1955	202	55	28	16	1
1941 - 1955	210	40	40	19	1
1940 & earlier	146	28	46	23	2

Personal Characteristics

Age and sex.--Florida's dentists, as a group, are very young. The median age of reporting dentists was only 40.2 years. Almost one-third were under the age of 35 and fully another third were between the ages of 35 and 44 (Table 6). Perhaps even more important than this very large proportion of young dentists are the small numbers of dentists at the other end of the age scale. Less than 10 percent of Florida's dentists are 60 years old or older including only 5 percent who have reached the age of 65.

Table 6.--Age and Sex

Sex and age	Number of dentists	Percent of dentists
Total	2,272	100
Male	2,260	99
Female	12	1
Age		
Under 30	207	9
30 - 34	518	23
35 - 39	377	17
40 - 44	392	18
45 - 49	242	11
50 - 54	162	7
55 - 59	128	6
60 - 64	83	4
65 - 69	60	3
70 - 74	33	1
75 & over	24	1

There are only 12 women dentists included among the respondents. For this reason, data for women will not be shown separately in this report.

Advanced training.--About 28 percent of Florida's dentists have had some type of advanced training (Table 7). Although a larger number have had advanced clinical training than academic training, there are 7 dentists who reported they have earned a second doctorate, 121 who have earned a master's degree, and another 178 who have completed one or more years of postgraduate study.

Table 7.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
Total	2,272	100
With advanced training	637	28
With no advanced training	1,635	72
Clinical training		
Residency completed	111	5
Internship completed	336	15
Academic training		
Ph.D., M.D., or other doctorate	7	*
M.A., M.S., or other master's degree	121	5
Postgraduate 1 year or more (no degree)	178	8

* Less than one-half of one percent.

The data in Table 8 reflect the growing tendency of dentists to seek additional training after receiving their dental degree. While many dentists under 40 are still serving internships and residencies, or are enrolled in school, 30 percent report that they have completed some form of advanced training. This percentage is equal to that recorded for dentists 40 to 54 years old and is considerably greater than the 17 percent recorded for dentists 55 and over. The most striking contrast is in the area of academic training. Sixteen percent of the dentists under 40 have completed a year or more of graduate or postgraduate study, compared with 13 percent of the dentists between 40 and 54, and only 7 percent of those 55 and over.

Table 8.--Advanced Training, by Age

Age	Dentists with advanced training	Percent of dentists			
		With advanced training	With academic training	With residency	With internship
Total	637	28	13	5	15
Under 40	328	30	16	5	15
40 - 54	238	30	13	6	16
55 & over	56	17	7	2	12

The trend is less obvious with respect to clinical training, but chiefly because relatively large numbers of dentists in the younger age groups have not yet completed their internships or residencies. Among dentists 40 to

54 years of age, 6 percent have completed residencies and another 16 percent have completed internships. These percentages compare with 2 percent and 12 percent, respectively, for dentists 55 years old and over.

Distribution and Current Status

Distribution of dentists.--Nearly three-quarters of all dentists in Florida are located in the eleven counties which make up the metropolitan areas (Table 9). The Miami area alone has almost as many dentists as all 56 of the nonmetropolitan counties combined. The three southern metropolitan areas, Miami, Fort Lauderdale, and West Palm Beach, contain 40 percent of the state's dentists, while the Orlando and Tampa areas contain 22 percent and the three northern metropolitan areas of Pensacola, Tallahassee, and Jacksonville contain 12 percent.

Table 9.--Distribution by County Group

County group	Number of counties	Number of dentists	Percent of dentists
All counties	67	2,272	100
All metropolitan areas	11	1,658	74
Miami	1	550	25
Tampa-St. Petersburg	2	343	15
Fort Lauderdale - Hollywood	1	205	9
Jacksonville	1	160	7
Orlando	2	156	7
West Palm Beach	1	145	6
Pensacola	2	63	3
Tallahassee	1	36	2
Nonmetropolitan county groups	56	582	26
Central city 25,000 & over	7	245	11
Central city 10,000-24,999	8	193	9
Central city 5,000- 9,999	11	75	3
Central city 2,500- 4,999	15	52	2
Central city under 2,500	15	17	1

In contrast, the nonmetropolitan areas are served by only 26 percent of the dentists, with 20 percent in the 15 counties with central cities of at least 10,000 persons and the remaining six percent in the 41 counties which have smaller central cities.

About the same proportion of in-migrant and nonmigrant dentists are located in the metropolitan areas. However, dentists who were previously located in the Northeastern states have shown a much stronger tendency than other in-migrants to locate in the metropolitan areas, particularly the three southern areas of Miami, Fort Lauderdale, and West Palm Beach (Table 10). Ninety percent of all these Northeasterners are located in the metropolitan areas, with 75 percent concentrated in the three southernmost areas. While dentists from the North Central and Western regions have chosen their locations more or less in the same proportions as the average for all in-migrant dentists, the dentists who come from the Southern states are distributed differently. Southern in-migrants are more likely than other dentists to locate in the nonmetropolitan areas of Florida, and relatively fewer are attracted to the three metropolitan areas in the south of Florida. Where, on the average, 44 percent of all in-migrant dentists have located their practices in Miami, Fort Lauderdale, and West Palm Beach, only 29 percent of the dentists from the South have done so, and 34 percent of the Southern in-migrants have elected to practice in a nonmetropolitan county, compared with the average of 25 percent for all in-migrants.

Table 10.--Florida Location of In-migrant Dentists, by Previous Location

County group	In-migrant dentists		Percent distribution			
	Number	Percent	Northeast	North Central	South	West
All counties	570	100	100	100	100	100
All metropolitan areas	429	75	90	78	66	75
Miami	133	23	42	20	17	20
Tampa-St. Petersburg	102	18	10	21	20	22
Fort Lauderdale	77	13	20	20	7	4
West Palm Beach	45	8	13	8	5	7
Orlando	34	6	3	5	7	11
Jacksonville	28	5	2	4	6	9
Pensacola	9	2	-	-	4	2
Tallahassee	1	*	-	-	*	-
Nonmetropolitan county groups	141	25	10	22	34	25
Central city 25,000 & over	58	10	5	13	11	9
Central city 10,000-24,999	47	8	1	5	14	9
Central city under 10,000	36	7	4	4	9	7

* Less than one-half of one percent.

Dentists in the nonmetropolitan counties tend to be younger than those in the metropolitan areas (Table 11). The median age in 1965 of dentists located in counties with central cities of 2,500 - 4,999 population was only 35.0 years, as compared with a median age of 38.8 years among dentists in the Orlando area, the metropolitan area with the highest percentage of younger dentists. Fort Lauderdale - Hollywood, West Palm Beach and Pensacola are the only other metropolitan areas where the median age of dentists is below the state average of 40.2 years. In every county group, except the Pensacola metropolitan area, the percent of dentists under 30 years exceeds the percent of dentists 64 years and over. Furthermore, the proportion of dentists under 35 is more than double the proportion 55 years and over in almost all county groups. The exceptions are the Tampa - St. Petersburg, Pensacola and Tallahassee metropolitan areas and the nonmetropolitan counties with less than 2,500 inhabitants in their central cities.

Table 11.--Median Age and Age Distribution, by County Group

County group	Median age	Percent of dentists					
		Under 30	30-34	35-44	45-54	55-64	65 & over
All counties	40.2	9	24	35	18	9	5
All metropolitan areas	40.6	9	21	36	19	10	5
Orlando	38.8	9	32	30	16	10	3
Ft. Lauderdale-Hollywood	39.0	8	21	40	18	9	4
West Palm Beach	39.4	6	25	38	20	6	5
Pensacola	39.5	8	20	40	16	8	8
Tallahassee	40.6	11	19	39	11	17	3
Miami	41.4	10	19	35	22	10	4
Tampa-St. Petersburg	41.6	8	21	34	18	12	7
Jacksonville	41.6	8	19	38	23	6	6
Nonmetropolitan county groups	38.4	11	28	33	14	9	5
Central city 2,500-4,999	35.0	10	40	25	13	10	2
Central city 10,000-24,999	37.8	11	29	36	12	6	6
Central city 5,000-9,999	37.9	16	29	26	11	14	4
Central city 25,000 & over	39.2	11	26	32	17	10	4
Central city under 2,500	39.4	12	17	41	12	6	12

Professional status.--As might be expected from the state's unusually young dentist supply, very few dentists are retired (Table 12). Almost 99 percent of the responding dentists are active in the profession. Only 6 dentists

Table 12.--Professional Activity Status

Activity status	Number of dentists	Percent of dentists
Total	2,272	100
Active in profession	2,242	99
Inactive in profession	30	1
In nondental employment	6	*
Retired	24	1

* Less than one-half of one percent.

reported their primary employment to be nondental and only 24 dentists considered themselves fully retired.

Although a majority of the retired dentists are in the older age groups, relatively few of the older dentists who responded to the survey consider themselves retired. Of the 117 dentists 65 and over, only 14 (12 percent) reported themselves as fully retired. The proportion who do retire, of course, is greater among the oldest age groups. Whereas only 5 percent of the 65-69 age group are retired, about 18 percent of the 70-74 age group, and 21 percent of those 75 and over are retired.

Active dentists in relation to population.--There was one professionally active respondent for every 2,619 persons in Florida in 1965 (Table 13). However, among the 63 counties with professionally active respondents, the number of persons per active dentist ranges from 1,450 for Gilchrist County to over ten times this number, 14,800, in Madison County. The remaining four counties, Glades, Gulf, Liberty, and Wakulla, had no active reporting dentist (see appendix Table B for individual county data).

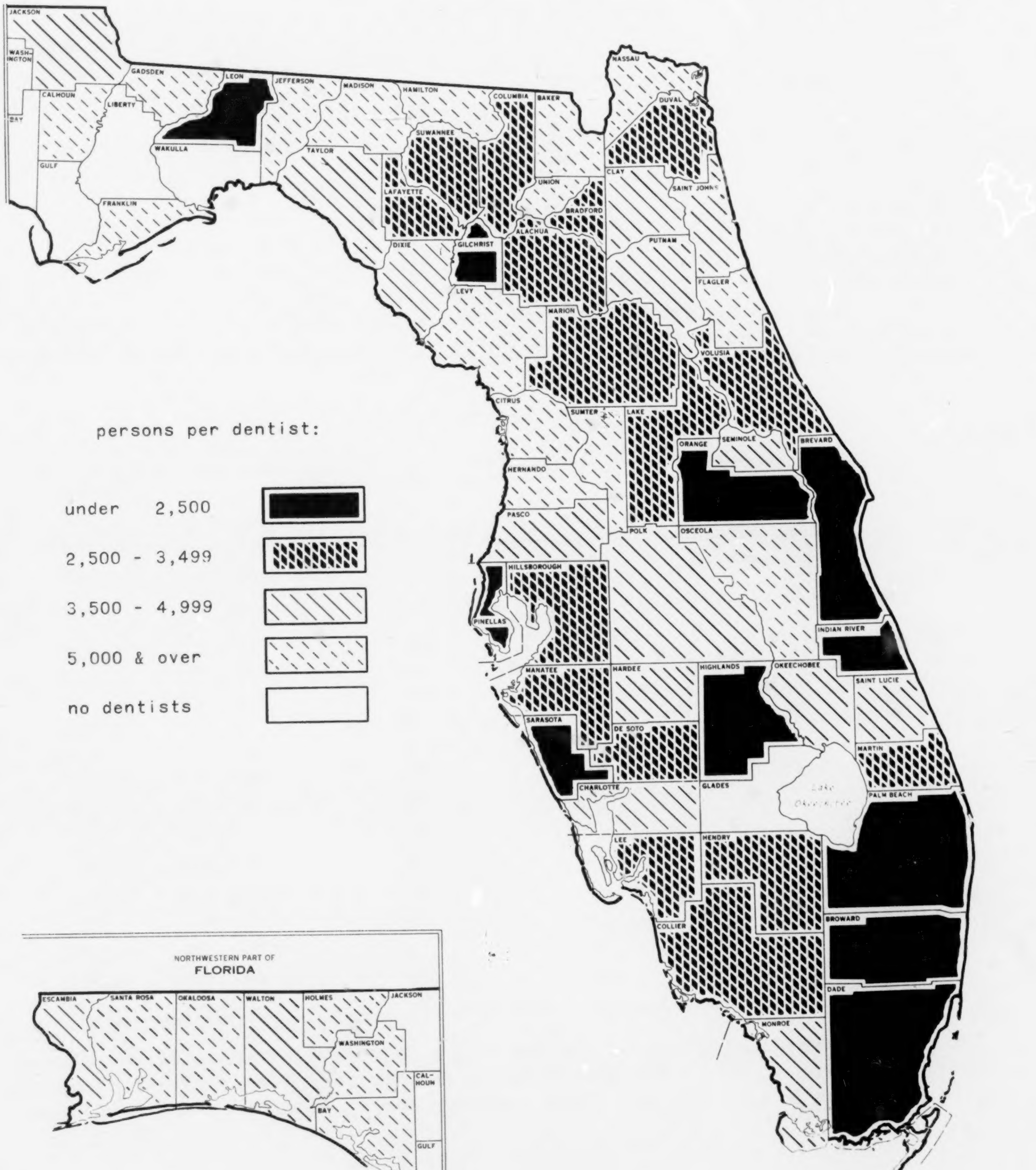
Table 13.--Number of Persons per Dentist

County group	Professionally active dentists	Civilian population	Persons per dentist
All counties	2,242	5,871,600	2,619
All metropolitan areas	1,642	3,951,700	2,407
West Palm Beach	145	282,300	1,947
Ft. Lauderdale-Hollywood	205	420,700	2,052
Miami	544	1,120,200	2,059
Tallahassee	36	86,500	2,403
Orlando	155	383,800	2,476
Tampa-St. Petersburg	337	905,400	2,687
Jacksonville	159	517,700	3,256
Pensacola	61	235,100	3,854
Nonmetropolitan county groups	578	1,919,900	3,322
Central city 10,000-24,999	192	572,200	2,980
Central city 25,000 & over	245	737,600	3,011
Central city 5,000-9,999	74	266,000	3,595
Central city 2,500-4,999	52	237,200	4,562
Central city under 2,500	15	106,900	7,127

The persons-per-dentist ratios for the eight metropolitan areas differ sharply. They range from 1,947 in the West Palm Beach area to a high 3,854 in Pensacola. Like West Palm Beach, the other two southern areas, Miami and Fort Lauderdale,

POPULATION PER DENTIST IN FLORIDA

BY COUNTY: 1965


persons per dentist:
under 2,500
2,500 - 3,499
3,500 - 4,999
5,000 & over
no dentists
NORTHWESTERN PART OF
FLORIDA
ESCAMBIA
SANTA ROSA
OKALOOSA
WALTON
HOLMES
JACKSON
WASHINGTON
CAL-HOUN
BAY
GULF
WASH-INGTON
CALHOUN
LIBERTY
GADSDEN
LEON
WAKULLA
FRANKLIN
JEFFERSON
MADISON
HAMILTON
TAYLOR
SUWANNEE
LAFAYETTE
DIXIE
GILCHRIST
COLUMBIA
BAKER
UNION
BRADFORD
ALACHUA
LEVY
NASSAU
DUVAL
CLAY
SAINT JOHNS
PUTNAM
FLAGLER
MARION
VOLUSIA
CITRUS
SUMTER
LAKE
HERNANDO
PASCO
SEMINOLE
ORANGE
BREVARD
POLK
OSCEOLA
HILLSBOROUGH
PINELLAS
INDIAN RIVER
MANATEE
HARDEE
HIGHLANDS
OKEECHOBEE
SAINT LUCIE
SARASOTA
DE SOTO
MARTIN
CHARLOTTE
GLADES
PALM BEACH
LEE
HENDRY
BROWARD
COLLIER
DADE
MONROE
Lake Okeechobee

have persons-per-dentist ratios which are considerably better than the state average of 2,619. But the ratios for the Tallahassee and Orlando areas are only slightly more favorable than this average and the ratios for the three remaining metropolitan areas are less favorable than the state average.

In the three metropolitan areas containing more than one county, there is the tendency for one of the two counties in each of the areas to have a considerably higher ratio than the other. In the Tampa-St. Petersburg area, Pinellas County has a ratio of 2,314, while Hillsborough County has a ratio of 3,192. Where Orange County of the Orlando metropolitan area has a ratio of 2,234, the other county, Seminole, has 4,914 persons for every dentist. In the Pensacola area the contrast is also quite sharp, with Escambia County, containing Pensacola, having a ratio of 3,579, and Santa Rosa County, a ratio of 6,940.

Similar contrasts exist among the nonmetropolitan counties. Of the 56 nonmetropolitan counties, 23 have ratios of over 5,000 persons per dentist, including the 4 counties which are assumed to have no active dentist, while only 7 have ratios better than the state average of 2,619. Both groups of counties whose central cities contain populations of over 10,000 have ratios of about 3,000 persons per dentist. These two groups of counties contain 4 of the 7 nonmetropolitan counties with ratios better than the state average but only 2 of the 23 counties with ratios over 5,000. Among the 3 groups of counties with central cities of less than 10,000 persons, the ratio of persons per dentist becomes markedly higher as the size of the central city declines, until for the group of counties without a town of 2,500 persons, there are over 7,000 persons for each dentist.

Professional Activity

Current employment.--Almost all of the professionally active dentists in Florida are engaged in private practice, 96 percent are self-employed and 2 percent are employed by another dentist (Table 14). Of the remaining

Table 14.--Current Employment of Professionally Active Dentists

Type of employment	Principal employment		Secondary dental employment[1]	
	Number employed	Percent	Number reporting	Percent of total
Total	2,242	100	121	5
Self-employed	2,136	96	111	5
Employed by other dentist	51	2	3	*
Employed by state or local government	25	1	4	*
Other dental employment	30	1	3	*

[1] Includes private practice, state or local government, voluntary agencies and other such employment.

* Less than one-half of one percent.

two percent, one percent are employed by the state or a local government and one percent are engaged in other dental employment. Only 121 dentists, or 5 percent of those professionally active, reported a secondary dental employment.

Activity last year.--About 98 percent of all dentists reporting on their professional activity in Florida last year provided care for patients (Table 15). Only 3 percent reported any research activity and only 2 percent spent some time in teaching. About 5 percent spent time in some other dental activity, in many cases taking additional training. In terms of professional time, however, these latter activities accounted for only very minor fractions of the total time spent in professional pursuits. Barely one-half of one percent of all dentist time was spent in research and teaching combined and less than two percent was spent in such other activities as the receipt of training.

Table 15.--Professional Activity Last Year

Type of activity	Dentists reporting activity last year		Percent of total professional time reported
	Number	Percent	
Total	2,083[1]	100[1]	100
Patient care	2,051	98	98
Research	61	3	*
Teaching	43	2	*
Other	99	5	2

1/ Individual items add to more than total because some dentists spent time in more than one activity.

* Less than one-half of one percent.

Of the dentists who provided patient care last year, the largest number, one-fifth of the total, spent 40 hours a week at this activity for at least 50 weeks of the year (Table 16). Only 13 percent devoted under 35 hours per

Table 16.--Time Spent in Patient Care Last Year

Weeks spent in patient care	Dentists providing patient care	Percent of reporting dentists				
		48 hrs. or more	41-47 hrs.	40 hrs.	35-39 hrs.	Under 35 hrs.
Total	100	15	17	40	17	11
50 weeks or more	45	8	8	19	6	4
48 - 49 weeks	35	5	7	13	7	3
40 - 47 weeks	17	2	2	6	4	3
Less than 40 weeks	3	*	*	2	*	1

* Less than one-half of one percent.

week or worked less than 40 weeks at this activity during the course of the year. An equal percentage of those reporting patient care, however, devoted exceptionally long hours to the treatment of patients. Thirteen percent spent the equivalent of 8 hours a day, six days a week at this activity for 48 weeks or more during the year.

Practice Characteristics

Limited practices.--Approximately 15 percent of all practicing dentists report they limit their practices to a dental specialty (Table 17). The metropolitan areas, of course, have a disproportionate share of these dentists. One in every 6 dentists practicing in a metropolitan area limits his practice, whereas in counties which are not part of metropolitan areas, only one in every 10 dentists does so. Among the metropolitan areas, West Palm Beach has the largest proportion of practitioners with limited practices, but the largest numbers of limited practitioners are in the Miami, Tampa-St. Petersburg, and Ft. Lauderdale-Hollywood areas. Pensacola and Tallahassee, on the other hand, have relatively few dentists who limit their practices to a specialty. The most frequent fields of specialization are orthodontics and oral surgery. They account for 5 percent and 4 percent, respectively, of the state's dental practitioners.

Table 17.--Limited Practices

County group	Dentists with limited practices	Percent of dental practitioners				
		All specialty areas	Orthodontics	Oral surgery	Pedodontics	Other
All counties	334	15	5	4	2	4
All metropolitan areas	273	16	5	4	2	5
Miami	100	18	6	4	2	6
Tampa-St. Petersburg	58	18	5	4	3	6
Ft. Lauderdale-Hollywood	30	14	4	4	3	3
West Palm Beach	27	19	6	8	2	3
Jacksonville	24	15	5	2	1	7
Orlando	23	15	3	5	3	4
Pensacola	7	11	5	3	-	3
Tallahassee	4	11	3	5	-	3
Nonmetropolitan counties	59	10	4	3	1	2

Use of auxiliaries.--Over 90 percent of the dental practitioners in Florida (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 18). Moreover, the vast majority, 84 percent, of these dentists employ at least one auxiliary full time, while only 7 percent employ part-time auxiliaries exclusively. The dental assistant, the most frequently employed auxiliary, is employed by 87 percent of the dentists, mostly full-time. Secretaries and receptionists are employed by 44 percent of the dentists, again mostly full-time. The use of part-time employees is more common for other types of auxiliaries. While 29 percent of all dentists employ dental hygienists and 15 percent employ dental technicians, about one-third, and two-fifths, respectively, of the dentists employing these personnel do so on a full-time basis. If all reported personnel vacancies were filled, the numbers of full-time hygienists and technicians would be almost doubled.

Table 18.--Dental Practitioners Employing One or More Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With only part-time personnel	With one full-time employee (or more)
Total	2,224	100	7	84
With no auxiliary	188	9	-	-
With one or more auxiliaries	2,016	91	7	84
With assistant	1,919	87	8	79
With hygienist	646	29	19	10
With laboratory technician	331	15	9	6
With secretary or receptionist	959	44	11	33
With other type of personnel	102	5	3	2

The use of auxiliaries varies with the age of the dentist (Table 19). Over 90 percent of the dental practitioners between the ages of 30 and 54 employ some type of auxiliary. Among dentists 65 years and over, the proportion

Table 19.--Dental Practitioners Employing Auxiliaries, by Age

Age	Percent of age group		
	With auxiliaries	With assistants	With hygienists
Under 30	84	81	20
30 - 34	93	92	23
35 - 44	94	90	36
45 - 54	94	90	36
55 - 64	86	76	21
65 & over	64	48	13

using auxiliaries drops to 64 percent. Young dentists who are just starting their practices do not reach peak utilization of assistants until they are 30 years of age and of hygienists until age 35.

Dentists in metropolitan areas and those in nonmetropolitan counties employ assistants with about the same frequency. However, hygienists and technicians are employed slightly more frequently by dentists in metropolitan areas.

Weeks and hours worked.--Although 89 percent of all dentists in private practice reported on the amount of time they had spent in their practices in the previous year, the percentage reporting is low for dentists 55 years old and over (Table 20). Since those not responding are likely to be those who are least active, the estimates on time worked by dentists in this age group are probably high. Even so, the percentage of dentists working 48 weeks or more and at least 40 hours per week drops precipitously among the older dentists. Whereas 67 percent of the dentists under 40 years of age and 58 percent of the dentists between 40 and 54 years old report working at least 48 weeks and at least 40 hours per week, only 37 percent of the dentists over 55 years old report working these hours.

Table 20.--Time Spent in Private Practice Last Year, by Age

Age	Dentists reporting time spent in practice		Percent working	
	Number	Percent of total	48 weeks or more 40 hrs/wk or more	Part year or less than 40 hrs/wk
Total	1,763	89	59	41
Under 40	792	90	67	33
40 - 54	703	92	58	42
55 & over	234	81	37	63

Out-of-state Civilian Dentists

State Location

Florida licenses are maintained by at least 770 civilian dentists located in 40 states, the District of Columbia, and several foreign nations (Table 21). Over one-half of these out-of-state dentists are located in other Southern states, primarily in Georgia, Alabama, North Carolina and Tennessee. More than 35 dentists in New York, Illinois and Ohio also hold licenses in Florida.

Table 21.--Out-of-state Dentists, by State

Present location	Number of dentists	Percent of dentists
Total	770	100
South	408	53
Georgia	136	18
Alabama	79	10
North Carolina	41	5
Tennessee	36	5
Virginia	22	3
Maryland	21	3
10 other states	73	9
North Central	174	23
Illinois	43	6
Ohio	36	5
Michigan	32	4
Indiana	23	3
7 other states	40	5
Northeast	137	17
New York	59	8
New Jersey	26	3
Pennsylvania	26	3
5 other states	26	3
West	41	5
California	30	4
5 other states	11	1
Foreign	10	1

Age and Professional Status

As a group, the out-of-state dentists are even younger than those presently in Florida. While 32 percent of the dentists located in Florida were under 35 in 1965, 40 percent of the out-of-state civilian dentists were in this young age group. Moreover, only 8 percent of the out-of-state dentists were 55 years old or over, as compared with 15 percent of the in-state dentists.

Less than one percent of the out-of-state dentists report they are retired. The majority, 85 percent, are in dental practice. About 5 percent are employed in governmental agencies, 4 percent are on the staffs of dental schools and the remaining 6 percent are engaged in other dental activities, primarily serving internships or residencies.

Out-Migrant Dentists

About one of every seven out-of-state respondents reported they had formerly been located in Florida. These 105 dentists are now located in 26 states, the District of Columbia, and several foreign countries. One-half of these out-migrants are now located in other Southern states--including 14 in Georgia, 10 in Alabama, 7 in North Carolina and 5 in Maryland. States in other regions which have attracted at least 5 dentists who once were located in Florida include New York, Indiana, California, Illinois and Michigan.

Almost two-thirds of the out-of-state respondents who were formerly located in Florida left the state after 1959 (Table 22). The low proportion of out-migrants prior to 1950, 15 percent, may be attributed to the fact that the longer a dentist remains out of state, the less likely he is to renew his license in the state he has left. However, the proportionately large numbers of out-migrants in the younger age groups reflect, at least in part, the relatively greater mobility of young dentists in relation to older practitioners. Three-fourths of the out-migrants were under 45 years of age in 1965, including over 40 percent who were under 35, while only 9 percent had reached 55 years of age.

Table 22.--Year Out-migrant Dentists Left State, by Age in 1965

Year left	Percent of out-migrants	Age distribution			
		Under 35	35-44	45-54	55 & over
Total	100	42	34	15	9
1960 or later	64	40	20	3	1
1950 - 1959	21	2	13	5	1
Before 1950	15	-	1	7	7

Appendix Table A.--Summary Statistics Used in Text

	Number of dentists
Total dentists licensed in Florida	3,303
Respondents -- total dentists participating in survey	3,274
(number not reporting current location or military status - 18)	
Civilian dentists in Florida[1] (designated simply as "dentists" in next tables)	2,272
(number not reporting: age - 46, year of graduation - 51, county location - 32, dental school attended - 13)	
Professionally active dentists[2]	2,242
Dental practitioners[3]	2,224
In limited practice[4]	334
Located in Florida last year:	
Reported professional activity[5]	2,083
Dentists providing patient care[6]	2,051
Reported time spent in patient care[7]	1,838
Dentists in private practice[8]	1,975
Reported time spent in practice[9]	1,763
Out-of-state dentists -- civilian respondents not located in Florida	770

1/ All responding dentists who currently work in Florida (excluding those in the armed forces) or who are retired and currently live in the state.

2/ All active civilian dentists currently in Florida -- excludes 24 dentists who are fully retired and 6 who are engaged principally in a nondental activity.

3/ All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

4/ Dentists who reported they limited their practice to a dental specialty.

5/ Dentists located in Florida last year who indicated type(s) of activity in which they engaged.

6/ All dentists who engaged in patient care last year, either as a primary or a secondary activity.

7/ Dentists reporting both hours and weeks spent in patient care last year.

8/ Dentists who reported they were primarily self-employed both currently and last year.

9/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.

Appendix Table B.--County Data

County	Civilian population (in 000's)	Profes-sionally active dentists	Persons per dentist	Percent of active dentists		Percent of practitioners using auxiliaries
				Under 35 yrs.	55 years or more	
All counties	5,871.6	2,242[1/]	2,619	32	14	91
Alachua	88.3	34	2,597	26	21	91
Baker	7.8	1	7,800	100	-	100
Bay	75.1	13	5,777	46	8	100
Bradford	13.1	4	3,275	50	-	75
Brevard	155.1	69	2,248	45	7	91
Broward	420.7	205	2,052	29	12	92
Calhoun	7.8	1	7,800	-	-	100
Charlotte	19.3	4	4,825	50	-	100
Citrus	11.4	2	5,700	100	-	100
Clay	20.5	5	4,100	40	-	80
Collier	22.2	7	3,171	57	-	100
Columbia	22.2	7	3,171	57	14	71
Dade	1,120.2	544	2,059	28	14	91
DeSoto	13.3	4	3,325	25	25	75
Dixie	4.8	1	4,800	-	-	100
Duval	517.7	159	3,256	26	13	91
Escambia	200.4	56	3,579	27	14	89
Flagler	5.2	1	5,200	100	-	100
Franklin	7.4	1	7,400	-	100	-
Gadsden	46.3	7	6,614	29	14	100
Gilchrist	2.9	2	1,450	-	50	100
Hamilton	7.8	1	7,800	-	-	100
Hardee	13.6	3	4,533	67	-	67
Hendry	10.6	4	2,650	25	25	75
Hernando	13.1	2	6,550	50	-	100
Highlands	25.4	13	1,954	46	31	92
Hillsborough	456.4	143	3,192	35	17	95
Holmes	11.1	1	11,100	-	-	100
Indian River	32.3	13	2,485	54	23	100
Jackson	37.3	10	3,730	60	-	70
Jefferson	10.3	2	5,150	50	-	100
Lafayette	3.0	1	3,000	-	-	-
Lake	66.3	20	3,315	30	15	100
Lee	70.0	28	2,500	50	14	93
Leon	86.5	36	2,403	31	19	92
Levy	11.2	1	11,200	-	-	100

Appendix Table B.--County Data (continued)

County	Civilian population (in 000's)	Professionally active dentists	Persons per dentist	Percent of active dentists		Percent of practitioners using auxiliaries
				Under 35 yrs.	55 years or more	
Madison	14.8	1	14,800	100	-	100
Manatee	81.6	26	3,138	35	15	88
Marion	61.1	19	3,216	11	11	84
Martin	22.6	7	3,229	71	-	86
Monroe	58.4	15	3,893	27	27	87
Nassau	19.5	3	6,500	33	-	100
Okaloosa	70.6	14	5,043	64	7	100
Okeechobee	8.6	2	4,300	50	50	100
Orange	315.0	141	2,234	43	11	94
Osceola	22.0	4	5,500	50	-	100
Palm Beach	282.3	145	1,947	30	11	88
Pasco	42.1	9	4,678	33	33	100
Pinellas	449.0	194	2,314	25	18	94
Polk	222.0	63	3,524	32	11	87
Putnam	34.8	7	4,971	29	14	100
St. Johns	32.7	9	3,633	11	33	100
St. Lucie	48.8	12	4,067	42	-	100
Santa Rosa	34.7	5	6,940	60	20	80
Sarasota	94.8	51	1,859	41	12	88
Seminole	68.8	14	4,914	14	29	86
Sumter	13.3	1	13,300	-	100	100
Suwannee	17.1	5	3,420	40	-	100
Taylor	14.5	4	3,625	50	50	75
Union	6.4	1	6,400	-	-	100
Volusia	150.2	57	2,635	37	18	95
Walton	16.1	4	4,025	-	-	100
Washington	11.6	2	5,800	50	-	100
4 counties with no reporting dentists[2]	21.6	-	-	-	-	-

1/ The total includes 22 dentists who failed to indicate their county location.

2/ There are 3 counties with no professionally active dentists reporting: Glades, Gulf and Liberty. In addition, there was one county--Wakulla--in which the one responding dentist was reported as professionally inactive.

DENTISTS LICENSED IN GEORGIA

During the 1966 registration period, 2,362 dentists registered with the Board of Dental Examiners of Georgia. Only 52 percent of these dentists are civilians actually located in Georgia, while 43 percent are civilians located in other States, and 5 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Georgia

Location and military status	All dentists	Percent of dentists
Total licensed	2,362	100
Respondents	2,199	93
Nonrespondents	163	7
Total licensed	2,362	100
Civilians in Georgia	1,240	52
Respondents	1,161	-
Nonrespondents	79	-
Civilians in another State	1,007	43
On active duty with Armed Forces	115	5

The survey questionnaire was completed by 2,199 dentists, 93 percent of all those registered. The data provided by the survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Board of Dental Examiners of Georgia or from the 1967 American Dental Directory published by the American Dental Association.

Among survey respondents, more than two-thirds (68 percent) hold a license to practice dentistry in one or more other States. Approximately 43 percent of the dentists located in Georgia hold more than one license, with 36 percent licensed in one other State and 7 percent licensed in two or more other States. The proportion of out-of-State dentists holding multiple licenses is considerably greater; 23 percent hold two or more licenses in addition to their Georgia license. Almost seventy percent of the licenses held outside of Georgia are held in adjacent States, including 32 percent in Florida, 12 percent in Alabama, 10 percent each in North and South Carolina, and 5 percent in Tennessee.

PROFESSIONAL TRAINING

More than three-fourths (77 percent) of Georgia's dentists graduated from Emory University School of Dentistry. The remainder (23 percent) of the State's dentists received their dental degrees from 41 other schools. Among these schools, the University of Tennessee is the largest contributor, having supplied 5 percent of the State's dentists, while the two next largest contributors, Howard University and Meharry Medical College, have together provided 4 percent of the dentists. Only four other schools--the Universities of Alabama, Maryland, and Louisville, and Northwestern University--have provided as much as 1 percent of Georgia's dentist supply.

Dental School Attended and Year of Graduation
for Dentists in Georgia

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	1,240 1/	-	418	464	354
		(Percent distribution by school)			
Emory University	953	77	68	79	84
University of Tennessee	64	5	11	3	1
Howard University	24	2	1	2	2
Meharry Medical College	22	2	*	3	1
38 other schools	172	14	20	13	12

1/ Dental school attended not available for 5 dentists and year of graduation for 4 dentists. Percents based on total for whom data are known.

* Less than one-half of one percent.

The proportion of Emory University graduates in the State dentist supply has decreased somewhat in recent years. Approximately 68 percent of the dentists in the State who graduated since 1955 received their dental education at Emory, compared to 82 percent of those who graduated in earlier years. At the same time, the proportion of Georgia dentists from the University of Tennessee and from various other out-of-State schools has increased.

Approximately 18 percent of the survey respondents, 204 dentists, reported that they had completed one or more years of advanced training beyond the dental degree. Among the 143 dentists who reported advanced academic training, 56 had earned a master's or other advanced degree, and another 87 had received no additional degrees but had completed one or more years of postgraduate study. Of the 103 dentists with advanced clinical training, 46 had completed a residency, and 57, an internship. There were 42 dentists who had completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Two-thirds of the 1,240 dentists in Georgia are located in the seven metropolitan areas of the State. The 5-county Atlanta area alone has 563 dentists, 46 percent of the total dental force. Seven in every 10 of these dentists (393) are in Fulton County, where Atlanta is located. The vast majority of the remaining dentists in this area are in De Kalb County (102 dentists) and Cobb County (50 dentists). The Macon and Savannah metropolitan areas have the next largest dental forces, even though each accounts for only 5 percent of the dentist supply. The Georgia portion of the interstate Augusta and Columbus metropolitan areas have 4 percent and 3 percent of the State's dentists, respectively. The remaining two metropolitan areas--Albany and the Georgia portion of the interstate Chattanooga area (Walker County)--together account for 3 percent of the dentist supply.

Distribution of Georgia Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	159	1,240	100
Metropolitan areas	13	815	66
Atlanta area	5	563	46
Macon area	2	62	5
Savannah area	1	58	5
Augusta area (Ga. part)	1	54	4
Columbus area (Ga. part)	2	43	3
Albany area	1	25	2
Chattanooga area (Ga. part)	1	10	1
Nonmetropolitan counties	146	425	34
Central city 10,000-49,999	18	204	16
Central city 5,000- 9,999	22	85	7
Central city 2,500- 4,999	41	89	7
Central city under 2,500	65	47	4

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

One-third of the State's dentists (425) are located in the 146 nonmetropolitan counties. The 18 counties with central cities of 10,000 or more persons have 204 dentists, 16 percent of the State's dental force. Only nine of the nonmetropolitan counties have as many as 10 dentists, and just one of these counties, Floyd, has as many as 20 dentists.

The 128 counties with fewer than 10,000 persons in their central cities have less than one-fifth of the State's dentist supply. There are 174 dentists in the 63 counties having between 2,500 and 9,999 persons in their central cities, while 47 dentists are scattered among the 65 counties with central cities of less than 2,500 population. While only seven of these 128 counties have as many as five dentists, 95 counties have fewer than three dentists, including 34 (one-fifth of all counties in the State) with no dentists according to available information.

AGE OF DENTISTS

The median age of dentists in Georgia is 42.7 years. Two-fifths of the State's dentists are under 40 years of age, including 28 percent who are under 35. Thirty-seven percent of the dentists are between 40 and 54 years of age, and 23 percent are 55 or over. About one out of eight, 149 dentists, are at least 65 years of age, including 92 who have reached the age of 70.

Age Distribution of Georgia Dentists

Age	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	1,240[1/]	100	-
Under 30	140	11	11
30 - 34	205	17	28
35 - 39	142	12	40
40 - 44	233	19	59
45 - 49	124	10	69
50 - 54	97	8	77
55 - 59	78	6	83
60 - 64	62	5	88
65 - 69	57	5	93
70 - 74	53	4	97
75 & over	39	3	100

[1/] Age not available for 10 dentists. Percents based on total for whom age is known.

Dentists in the metropolitan areas, with a median age of 41.9 years, are more than two years younger, on the average, than dentists in the nonmetropolitan counties, where the median age is 44.2 years. Of the metropolitan areas, the Atlanta area, with a median age of 41.2 years, has the youngest group of dentists. However, the age differences among the counties in this area are quite pronounced, with the older dentists concentrated in Fulton County, the hub of the area. The median age of dentists in this county is 43.0 years, while dentists in the other four counties in the Atlanta area average about 7 years younger, with a median age of 36.3 years. Among the nonmetropolitan counties, those with central cities of less than 2,500 population have the oldest group of dentists, with a median age of 46.8 years--almost four years older than the median age for the State.

ACTIVE DENTISTS IN RELATION TO POPULATION

Approximately 97 percent (1,199) of the 1,240 dentists in Georgia are active in their profession, giving the State one professionally active dentist for every 3,506 persons. In the metropolitan areas, which have 66 percent of the active dentists and 49 percent of the population, the ratio is one dentist for every 2,588 persons. The remainder of the State, with 34 percent of the active dentists and 51 percent of the population, has a much less favorable ratio of one dentist for every 5,272 persons.

Number of Persons per Active Dentist in Georgia

County group*	Professionally active dentists	Population	Persons per dentist
All counties	1,199	4,203,900	3,506
Metropolitan areas	789	2,042,300	2,588
Atlanta area	544	1,163,500	2,139
Macon area	59	199,000	3,373
Savannah area	58	201,400	3,472
Columbus area (Ga. part)	42	191,300	4,555
Augusta area (Ga. part)	53	148,600	2,804
Albany area	24	88,900	3,704
Chattanooga area (Ga. part)	9	49,600	5,511
Nonmetropolitan counties	410	2,161,600	5,272
Central city 10,000-49,999	197	722,200	3,666
Central city 5,000- 9,999	84	428,000	5,095
Central city 2,500- 4,999	86	498,700	5,799
Central city under 2,500	43	512,700	11,923

* See Appendix Table for individual county data.

Among the metropolitan areas, the Atlanta area has the most favorable ratio, 2,139 persons per dentist. Within this area, Fulton County has an even more favorable ratio of 1,575, compared to a combined ratio of 3,433 in the other four counties. Three other areas--Macon, Savannah, and the Georgia portion of the interstate Augusta area--have ratios under 3,500. Of the three remaining areas, Albany has the best ratio with one dentist for every 3,700 persons, while the Georgia portions of the interstate Columbus and Chattanooga areas have more than 4,500 persons per dentist.

Of the 146 nonmetropolitan counties, only 19 have persons-per-dentist ratios below 3,500, while 48 counties have more than 6,000 persons per dentist, including 11 with ratios exceeding 10,000. Generally, the ratio of persons per dentist becomes much less favorable as the size of the central city decreases. The counties with 10,000 or more persons in their central cities have an average of 3,666 persons per dentist, while counties with central cities of less than 2,500 average almost 12,000 persons per dentist.

UTILIZATION OF AUXILIARIES

More than nine-tenths of the responding dental practitioners in Georgia (i.e., dentists who spend any time working at the chair) employ one or more auxiliaries. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of all practitioners, including 78 percent who employ at least one on a full-time basis. Forty-seven percent of the dentists employ dental hygienists, with 29 percent utilizing such personnel full time. Secretaries and receptionists are employed by 45 percent of the practitioners, most often on a full-time basis.

Georgia Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	1,102[1/]	100	87	4
One or more auxiliaries	968	91	87	4
Assistant	886	83	78	5
Hygienist	499	47	29	18
Laboratory technician	98	9	4	5
Secretary or receptionist	480	45	33	12
Other type of personnel	86	8	4	4
No auxiliary	99	9	-	-

[1/] Includes 35 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist, becoming less frequent among those in the older age groups. Approximately 95 percent of Georgia dentists under 55 years of age employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 83 percent among dentists 55 to 64 years of age and to 68 percent among dentists 65 or over.

Some 13 percent of the responding practitioners in Georgia reported one or more vacancies for auxiliary personnel. Two-fifths of these dentists indicated a need for full-time dental hygienists, and one-fourth have vacant positions for full-time dental assistants.

OTHER SURVEY FINDINGS

☐ Ninety-four percent of the responding professionally active dentists in Georgia are engaged in private practice, with 93 percent self-employed and one percent employed by another dentist. Two percent are on the staff of the dental school and another two percent are employed by governmental agencies. The remaining two percent are engaged in some other dental activity, such as taking advanced training.

☐ Some 15 percent of the dentists reported at least one part-time dental activity in addition to their principal employment. Part-time teaching at a dental school was reported by six percent of the dentists, and employment by governmental agencies, by 4 percent. A variety of other secondary dental activities were reported, including service with a voluntary agency and employment by another dentist.

☐ Dentists reporting time spent in patient care devoted an average of 40.4 hours a week to this activity for 48.2 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ Fifteen percent of the dental practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics. Twenty percent of the dentists in metropolitan areas limit their practice, compared to only 7 percent in nonmetropolitan counties.

☐ Of the responding dentists who are licensed in Georgia but located in another State, four-fifths are in the adjacent States of Florida, Alabama, the Carolinas, or Tennessee. The remainder are scattered throughout 30 other States and the District of Columbia, with the largest numbers in California, Mississippi, and New York.

August 1968.

APPENDIX TABLE

Selected Data on Dentists in Georgia, by Location

Area and county	Civilian dentists					Profes-sionally active	Population[1/] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965				
				Under 35	55 and over			
All counties	1,240	1,161	79	345	289	1,199	4,203.9	3,506
Metropolitan areas[2/]	815	759	56	253	179	789	2,042.3	2,588
Atlanta area	563	524	39	188	112	544	1,163.5	2,139
Clayton	11	9	2	7	1	9	60.5	6,722
Cobb	50	46	4	22	6	48	138.8	2,892
De Kalb	102	100	2	48	8	101	317.4	3,143
Fulton	393	364	29	109	96	379	597.0	1,575
Gwinnett	7	5	2	2	1	7	49.8	7,114
Macon area	62	58	4	15	17	59	199.0	3,373
Bibb	52	48	4	14	17	49	152.2	3,106
Houston	10	10	-	1	-	10	46.8	4,680
Savannah area	58	55	3	16	13	58	201.4	3,472
Chatham	58	55	3	16	13	58	201.4	3,472
Augusta area (Ga. part)	54	50	4	19	16	53	148.6	2,804
Richmond	54	50	4	19	16	53	148.6	2,804
Columbus area (Ga. part)	43	38	5	9	11	42	191.3	4,555
Chattahoochee	-	-	-	-	-	-	13.4	-
Muscogee	43	38	5	9	11	42	177.9	4,236
Albany area	25	24	1	6	5	24	88.9	3,704
Dougherty	25	24	1	6	5	24	88.9	3,704

APPENDIX TABLE (cont'd)

Selected Data on Dentists in Georgia, by Location

Area and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 and over			
Metropolitan areas[2/] (cont'd)								
Chattanooga area (Ga. part)	10	10	-	-	5	9	49.6	5,511
Walker	10	10	-	-	5	9	49.6	5,511
Nonmetropolitan counties[3/]	425	402	23	92	110	410	2,161.6	5,272
Central city 25,000-49,999	57	50	7	11	11	55	174.2	3,167
Clarke	19	16	3	4	2	17	50.7	2,982
Floyd	21	17	4	3	4	21	72.2	3,438
Lowndes	17	17	-	4	5	17	51.3	3,018
Central city 10,000-24,999	147	141	6	30	38	142	548.0	3,859
Baldwin	13	13	-	5	1	13	36.2	2,785
Carroll	9	9	-	1	3	9	39.2	4,356
Colquitt	7	6	1	2	2	6	33.6	5,600
Coweta	7	7	-	2	1	7	29.6	4,229
Crisp	5	5	-	1	2	5	17.9	3,580
Decatur	4	3	1	2	-	4	23.8	5,590
Glynn	15	14	1	2	3	15	50.1	3,340
Hall	19	19	-	4	7	19	53.5	2,816
Laurens	7	7	-	2	1	7	33.5	4,786
Spalding	11	11	-	2	3	10	38.4	3,840
Sumter	7	6	1	1	3	7	25.2	3,600
Thomas	12	11	1	1	6	10	37.0	3,700
Troup	15	14	1	2	3	14	46.8	3,343

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Georgia, by Location

Area and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 and over			
Nonmetropolitan counties[3] (cont'd.)								
Central city 10,000-24,999 (cont'd.)								
Ware	8	8	-	1	2	8	35.0	4,375
Whitfield	8	8	-	2	1	8	48.2	6,025
Central city 5,000-9,999	85	83	2	24	21	84	428.0	5,095
Barrow	4	4	-	1	1	4	15.0	3,750
Bartow	8	8	-	3	4	7	31.0	4,429
Ben Hill	4	4	-	1	2	4	13.4	3,350
Brooks	2	2	-	-	1	2	14.5	7,250
Bulloch	6	6	-	3	-	6	24.8	4,133
Burke	2	2	-	-	1	2	19.4	9,700
Coffee	4	4	-	2	1	4	21.7	5,425
Dodge	2	2	-	-	-	2	16.1	8,050
Elbert	4	4	-	2	1	4	17.6	4,400
Emanuel	3	3	-	2	-	3	17.2	5,733
Grady	3	3	-	-	2	3	17.8	5,933
Newton	5	5	-	1	-	5	21.5	4,300
Peach	2	2	-	-	-	2	14.9	7,450
Polk	6	6	-	2	2	6	28.6	4,767
Stephens	3	2	1	-	1	3	19.2	6,400
Terrell	3	3	-	-	-	3	12.4	4,133
Tift	4	3	1	1	1	4	24.0	6,000
Toombs	5	5	-	2	-	5	16.7	3,340
Upson	5	5	-	1	2	5	23.8	4,760
Walton	4	4	-	1	1	4	20.8	5,200
Washington	2	2	-	-	-	2	18.2	9,100
Wayne	4	4	-	2	1	4	19.4	4,850

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Georgia, by Location

Area and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 and over			
Nonmetropolitan counties[3/] (cont'd.)								
Central city 2,500-4,999	89	82	7	21	24	86	498.7	5,799
Appling	2	2	-	1	1	2	13.0	6,500
Bacon	1	-	1	1	-	1	8.2	8,200
Berrien	2	2	-	-	1	2	11.3	5,650
Bleckley	1	1	-	1	-	1	9.8	9,800
Butts	1	1	-	1	-	1	8.9	8,900
Camden	2	2	-	1	1	2	10.9	5,450
Chattooga	2	2	-	1	-	2	19.7	9,850
Clinch	1	-	1	-	-	1	6.9	6,900
Cook	3	3	-	2	-	3	11.9	3,967
Douglas	3	3	-	1	2	2	18.4	9,200
Early	2	2	-	-	1	2	11.8	5,900
Evans	1	1	-	-	-	1	7.0	7,000
Gordon	4	4	-	-	-	4	19.5	4,875
Greene	1	1	-	-	-	1	10.8	10,800
Habersham	7	6	1	2	1	6	18.9	3,150
Haralson	2	2	-	-	-	2	14.5	7,250
Hart	3	2	1	-	1	3	15.6	5,200
Irwin	1	1	-	1	-	1	8.3	8,300
Jackson	6	6	-	1	3	6	18.5	3,083
Jeff Davis	3	3	-	1	1	3	8.9	2,967
Jenkins	2	2	-	-	1	2	8.7	4,350
Lamar	1	1	-	1	-	1	10.3	10,300
Liberty	1	1	-	1	-	1	15.8	15,800
Lumpkin	2	2	-	-	1	2	7.5	3,750
Mc Duffie	4	4	-	-	2	4	13.3	3,325

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Georgia, by Location

Area and county	Civilian dentists Total	Respond-ents	Non-respond-ents	Age in 1965 Under 35	55 and over	Profes-sionally active	Population[1/] (in 000's)	Persons per active dentist
Nonmetropolitan counties [3/] (cont'd.)								
Central city 2,500-4,999 (cont'd.)								
Macon	-	-	-	-	-	-	12.9	-
Meriwether	3	3	-	-	1	3	19.4	6,467
Mitchell	3	3	-	-	-	3	19.0	6,333
Monroe	1	1	-	-	-	1	10.5	10,500
Morgan	1	1	-	-	1	1	9.8	9,800
Pulaski	2	2	-	-	1	2	7.9	3,950
Putnam	2	1	1	-	-	2	7.9	3,950
Randolph	-	-	-	-	-	-	10.1	-
Rockdale	4	3	1	1	1	4	11.3	2,825
Screven	1	1	-	-	-	1	13.9	13,900
Seminole	2	2	-	1	-	2	6.4	3,200
Tattnall	3	3	-	1	1	3	15.9	5,300
Telfair	2	2	-	-	1	2	11.3	5,650
Turner	1	1	-	1	-	1	7.6	7,600
Wilkes	3	3	-	1	1	2	10.5	5,250
Worth	3	2	1	-	1	3	15.9	5,300
Central city under 2,500	47	46	1	6	16	43	512.7	11,923
Atkinson	1	1	-	-	-	1	5.8	5,800
Baker	-	-	-	-	-	-	4.0	-
Banks	-	-	-	-	-	-	6.4	-
Brantley	-	-	-	-	-	-	5.8	-
Bryan	-	-	-	-	-	-	6.3	-
Calhoun	2	2	-	-	1	2	6.9	3,450
Candler	1	1	-	-	-	1	6.2	6,200

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Georgia, by Location

Area and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 and over			
Nonmetropolitan counties 3/ (cont'd.)								
Central city under 2,500 (cont'd.)								
Catoosa	2	2	-	-	1	1	23.4	23,400
Charlton	2	2	-	-	2	2	5.6	2,800
Cherokee	3	3	-	-	-	3	24.0	8,000
Clay	1	1	-	-	-	1	4.1	4,100
Columbia	1	1	-	1	-	1	14.9	14,900
Crawford	-	-	-	-	-	-	5.7	-
Dade	1	1	-	-	-	1	9.2	9,200
Dawson	-	-	-	-	-	-	3.5	-
Dooly	1	1	-	-	-	1	10.6	10,600
Echols	-	-	-	-	-	-	1.7	-
Effingham	-	-	-	-	-	-	10.6	-
Fannin	2	2	-	1	-	2	13.1	6,550
Fayette	1	1	-	1	-	1	8.2	8,200
Forsyth	1	1	-	-	-	1	12.7	12,700
Franklin	2	2	-	1	1	2	12.9	6,450
Gilmer	1	1	-	-	-	1	8.5	8,500
Glascock	-	-	-	-	-	-	2.3	-
Hancock	-	-	-	-	-	-	9.6	-
Harris	-	-	-	-	-	-	11.1	-
Heard	-	-	-	-	-	-	4.9	-
Henry	3	3	-	1	1	3	18.5	6,167
Jasper	-	-	-	-	-	-	5.6	-
Jefferson	2	2	-	-	-	2	17.1	8,550
Johnson	2	2	-	-	2	2	7.6	3,800
Jones	-	-	-	-	-	-	8.9	-

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Georgia, by Location

Area and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 and over			
Nonmetropolitan counties[3/] (cont'd.)								
Central city under 2,500 (cont'd.)								
Lanier	-	-	-	-	-	-	5.0	-
Lee	-	-	-	-	-	-	6.1	-
Lincoln	-	-	-	-	-	-	5.6	-
Long	-	-	-	-	-	-	4.0	-
Mc Intosh	1	1	-	-	1	1	6.4	6,400
Madison	-	-	-	-	-	-	10.9	-
Marion	-	-	-	-	-	-	5.1	-
Miller	1	1	-	-	-	1	6.2	6,200
Montgomery	-	-	-	-	-	-	5.8	-
Murray	1	1	-	-	-	1	10.4	10,400
Oconee	-	-	-	-	-	-	6.0	-
Oglethorpe	-	-	-	-	-	-	7.1	-
Paulding	1	1	-	-	-	1	13.6	13,600
Pickens	2	2	-	-	-	2	9.0	4,500
Pierce	2	1	1	-	-	2	9.2	4,600
Pike	-	-	-	-	-	-	6.7	-
Quitman	1	1	-	-	1	1	2.3	2,300
Rabun	1	1	-	-	1	-	7.5	-
Schley	-	-	-	-	-	-	3.5	-
Stewart	-	-	-	-	-	-	6.9	-
Talbot	1	1	-	-	1	1	6.9	6,900
Taliaferro	1	1	-	-	1	-	2.9	-
Taylor	1	1	-	-	1	1	8.0	8,000
Towns	2	2	-	-	1	2	4.4	2,200
Treutlen	-	-	-	-	-	-	5.6	-

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Georgia, by Location

Area and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 and over			
Nonmetropolitan counties[3/] (cont'd.)								
Central city under 2,500 (cont'd.)								
Twiggs	-	-	-	-	-	-	7.8	-
Union	-	-	-	-	-	-	6.1	-
Warren	1	1	-	-	-	1	6.9	6,900
Webster	-	-	-	-	-	-	2.9	-
Wheeler	-	-	-	-	-	-	4.9	-
White	1	1	-	1	-	1	7.2	7,200
Wilcox	-	-	-	-	-	-	7.1	-
Wilkinson	1	1	-	-	1	-	9.0	-

[1/] Copyright 1965. Sales Management Survey of Buying Power. Further reproduction is forbidden.

[2/] Georgia counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as defined by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's--Columbus, Augusta, and Chattanooga--statistics are presented only for dentists located in the Georgia portions.

[3/] Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN HAWAII

During the 1965 registration period, 590 dentists registered with the Hawaii Board of Dental Examiners. A total of 561 dentists responded to the survey, 95 percent of all those registered. Over three-fourths are civilians located in Hawaii, 18 percent are civilians located in other States, and 5 percent are on active duty with the Armed Forces.

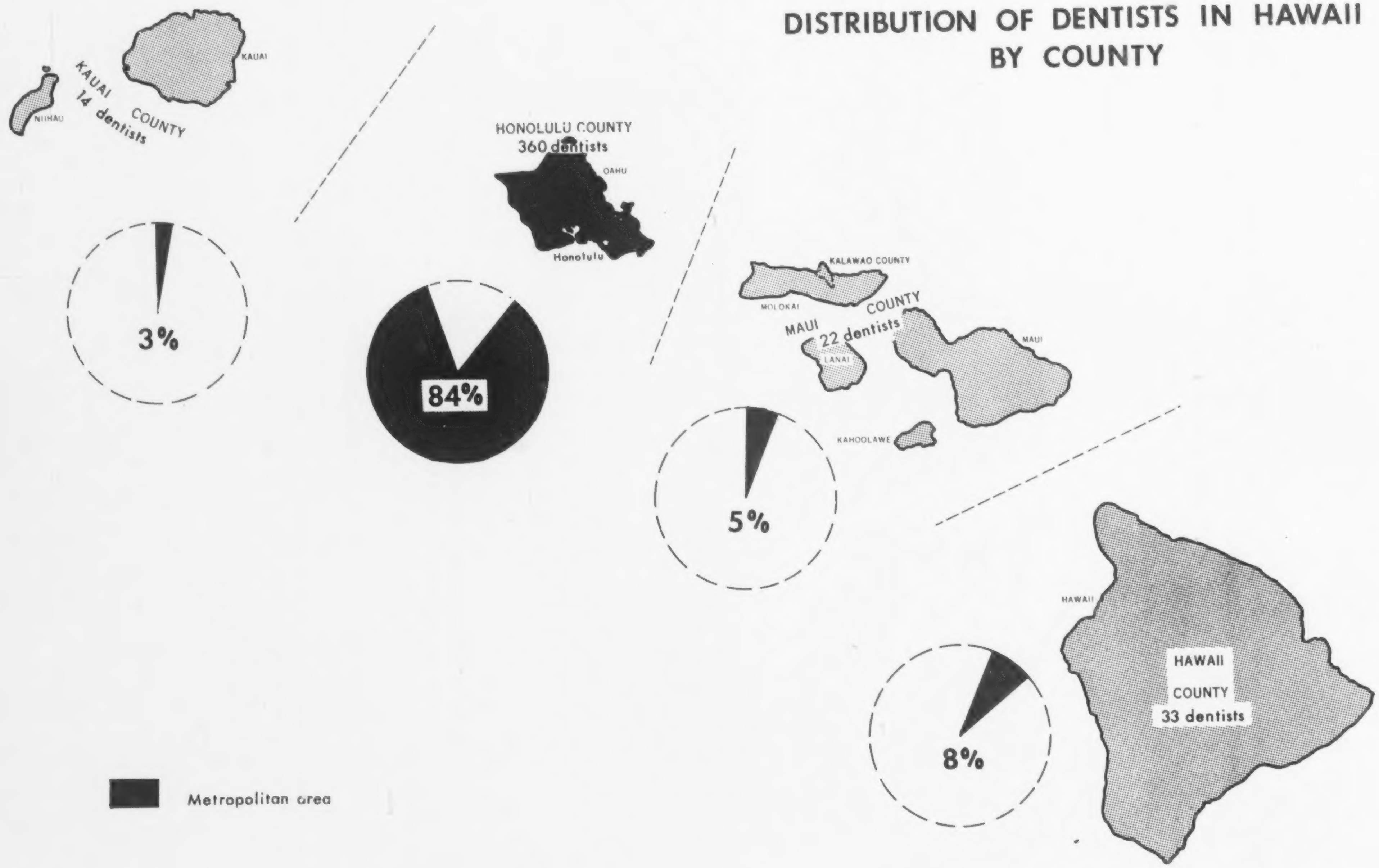
Location and Military Status of Dentists
Licensed in Hawaii

Location and military status	All dentists	Percent of dentists
Total licensed	590	100
Respondents	561	95
Nonrespondents	29	5
Respondents	561	100
Civilians in Hawaii	429	77
Civilians in another State	102	18
On active duty with Armed Forces	30	5

About 57 percent of the respondents hold a license to practice dentistry in one or more other States. Among the dentists located in Hawaii, 46 percent hold more than one license, with 39 percent licensed in one other State, and 7 percent licensed in two or more other States. Multiple licensure is considerably more common among responding dentists registering in Hawaii but located out-of-State; more than one-third hold two or more licenses in addition to their Hawaii license.

Approximately 35 percent of the licenses held outside of Hawaii are held in California. Another 30 percent are held in two North Central States, Illinois and Missouri. The remaining out-of-State licenses are held in 24 other States and the District of Columbia.

DISTRIBUTION OF DENTISTS IN HAWAII BY COUNTY


KAUAI
NIIHAU
KAUAI COUNTY
14 dentists
3%
HONOLULU COUNTY
360 dentists
OAHU
Honolulu
84%
KALAWAO COUNTY
MOLOKAI
MAUI COUNTY
22 dentists
LANAI
MAUI
KAHOOLAWE
5%
HAWAII
HAWAII COUNTY
33 dentists
8%
Metropolitan area

DISTRIBUTION OF DENTISTS

More than four-fifths (84 percent) of the 429 responding dentists in Hawaii are located in the Honolulu metropolitan area (Honolulu County). The remaining 16 percent of the dentists are located in the nonmetropolitan counties of the State. Of these counties, Hawaii County has the largest dental force, 8 percent of the State supply. Maui and Kauai Counties have 5 percent and 3 percent of the total supply, respectively.

Distribution of Hawaii Dentists, by County

County	Total civilian dentists	Professionally active dentists	Population[1/] (in 000's)	Persons per active dentist
All counties	429	417	730.7	1,752
Honolulu metropolitan area	360	350	597.5	1,707
Honolulu County	360	350	597.5	1,707
Nonmetropolitan counties	69	67	133.2	1,988
Hawaii County	33	31	61.1	1,971
Maui County	22	22	44.5	2,023
Kauai County	14	14	27.3	1,950
Kalawao County	-	-	0.3	-

1/ Population estimates, copyright 1965: Sales Management Survey of Buying Power.

Of the 429 dentists in Hawaii, 417 (97 percent) are active in their profession, giving Hawaii one professionally active dentist for every 1,752 persons. There is one dentist for every 1,707 persons in the Honolulu metropolitan area, while the remainder of the State has a less favorable ratio of one dentist for every 1,988 persons. Kauai, Hawaii, and Maui Counties have very similar ratios, between 1,950 and 2,025.

AGE DISTRIBUTION OF DENTISTS

The median age of dentists in Hawaii is 43.6 years. About one-fifth (21 percent) are under 35, yet more than one-fourth (28 percent) are 55 years of age or older, including 8 percent who have reached the age of 65. Approximately one-half of all dentists in the State are in the age group 35 through 54, with one-third between the ages of 35 and 44.

Age Distribution of Hawaii Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent
Total	429[1/]	100	-
Under 30	23	5	5
30-34	66	16	21
35-39	78	18	39
40-44	65	15	54
45-49	43	10	64
50-54	35	8	72
55-59	33	8	80
60-64	49	12	92
65-69	23	5	97
70-74	7	2	99
75 and over	5	1	100

[1/] Age not available for 2 dentists.

Dentists in the Honolulu metropolitan area, with a median age of 42.9 years, are almost seven years younger, on the average, than dentists in the nonmetropolitan counties, where the median age is 49.5 years. Approximately 22 percent of the dentists in Honolulu are under 35, and 25 percent are 55 years of age or older. By comparison, only 15 percent of the dentists in nonmetropolitan counties are under 35 years of age, while 39 percent have reached the age of 55.

DENTAL SCHOOL ATTENDED

Two-thirds of the 429 responding dentists located in Hawaii are graduates of 17 dental schools in the North Central States. Among these schools, the University of Missouri and Northwestern University are the major contributors, each having provided 14 percent of Hawaii's dentists. The only other schools in the North Central States to contribute more than 25 of the State's dentists are two Missouri schools, St. Louis and Washington Universities, which have together supplied 15 percent of the dental force.

School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	429[1]	-	143	146	137
		(Percent distribution by school)			
North Central States	284	67	78	72	49
Missouri	59	14	15	20	6
Northwestern	58	14	15	13	13
St. Louis	37	9	9	10	7
Washington (St. Louis)	26	6	8	7	3
13 other schools	104	24	31	22	20
Western States	87	20	8	10	45
Southern California	57	13	3	6	32
7 other schools	30	7	5	4	13
Other regions (16 schools)	54	13	14	18	6

[1] Dental school attended not reported by 4 dentists and year of graduation by 3 dentists. Percents are based on data supplied.

Another 20 percent of Hawaii's dentists graduated from eight schools located in Western States, primarily the University of Southern California, which has provided 13 percent of the State's dentists. The remaining 13 percent of Hawaii's responding dentists were trained in 16 dental schools located in other regions of the country.

A fairly substantial proportion of Hawaii's dentists are recent dental school graduates. One-third have completed their dental education since 1955, equaling the proportion who received their dental degrees prior to World War II. In recent years, Hawaii's dentists have tended to come increasingly from dental schools in the North Central States. The proportionate contribution of these schools has increased from 49 percent of all dentists currently located in the State who graduated before World War II to 78 percent of those who graduated after 1955. At the same time, there has been a considerable decrease in the contribution of schools located in the West.

UTILIZATION OF AUXILIARIES

Almost 70 percent of the responding dental practitioners in Hawaii (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 63 percent of all practitioners, including 57 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 14 percent of the dentists, with about two-thirds of these dentists utilizing such personnel full time. Only 10 percent of the dentists employ dental hygienists and 5 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Hawaii Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	412[1/]	100	62	7
One or more auxiliaries	272	69	62	7
Assistant	250	63	57	6
Hygienist	39	10	3	7
Laboratory technician	18	5	1	4
Secretary or receptionist	57	14	10	4
Other type personnel	16	4	1	3
No auxiliary	123	31	-	-

1/ Includes 17 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Eighty-one percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 57 percent among dentists 45 to 64 years old and to only 46 percent among dentists 65 and over.

OTHER SURVEY FINDINGS

☐ One of every six survey respondents, 68 dentists, reported that they had completed one year or more of advanced training since receiving the dental degree. Thirty-nine dentists reported completion of advanced clinical training as residents or interns, and 48 dentists had completed academic training as graduate or postgraduate students. Nineteen dentists had completed at least a year of both academic and clinical training.

☐ Ninety-six percent of the responding professionally active dentists in Hawaii are primarily engaged in private practice, with 95 percent self-employed and one percent employed by another dentist. The remaining four percent are either employed by governmental agencies or engaged in other dental activities, such as taking advanced training.

☐ Dentists reporting time spent in patient care devoted an average of 41.3 hours per week to this activity for 47.7 weeks during the year preceding the survey. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ About 11 percent of the dentists in Hawaii reported that they limit their practice to a dental specialty, primarily orthodontics. Almost all of the dentists who reported limiting their practices are located in the Honolulu metropolitan area.

☐ Of the 102 dentists licensed in Hawaii but located out of State, two-thirds are located in California, and 11 percent are located in Oregon or Washington. The remaining out-of-State dentists are scattered throughout 15 other States across the Nation.

July 1968.

DENTISTS LICENSED IN IDAHO

During the 1966 registration period, 573 dentists registered with the Idaho State Board of Dentistry. Fifty-four percent of these dentists were civilians located in Idaho, another 41 percent were civilians located in other states, primarily California, Oregon and Washington, and 5 percent were on active duty in the Armed Forces.

Location and Military Status of Dentists
Licensed in Idaho

Location and military status	All dentists	Percent of dentists
Total licensed	573	100
Respondents	521	91
Nonrespondents	52	9
Total licensed	573	100
Civilians in Idaho	309	54
Respondents	278	-
Nonrespondents	31	-
Civilians in another state	233	41
On active duty with Armed Forces	30	5
Not reported	1	*

* Less than one-half of one percent.

The survey questionnaire was completed by 521 dentists, 91 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Idaho State Board of Dentistry or from the 1967 American Dental Directory, published by the American Dental Association.

DENTAL SCHOOL ATTENDED

The dental school at the University of Oregon has been the major contributor to the Idaho dental force, having trained almost one-fourth (23 percent) of the total supply. The University of Washington, the next largest contributor, has trained an additional 13 percent of the dentists. The University of Southern California is the only other dental school in the West to have supplied more than 5 percent of the State's dental force.

One-half of Idaho's dentists are graduates of 15 dental schools in the North Central States. Northwestern University is the largest contributor among these schools, having trained 10 percent of the dentists. Three other schools in the North Central States, Missouri (Kansas City), Washington (St. Louis) and Creighton have each contributed 6 percent. The Universities of Minnesota and Nebraska are the only other schools in the region to contribute as much as 5 percent of the State's dentists.

Dental School Attended and Year of Graduation
for Dentists in Idaho

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	309 [1]	-	110	122	75
		(Percent distribution by school)			
West	140	46	43	46	51
Oregon	69	23	13	24	35
Washington	40	13	25	11	-
Southern California	23	7	2	9	13
5 other schools	8	3	4	2	3
North Central	154	50	52	51	46
Northwestern	30	10	13	11	4
Missouri (Kansas City)	19	6	8	2	11
Washington (St. Louis)	19	6	8	8	-
Creighton	17	6	8	5	3
11 other schools	69	22	15	25	28
Other regions (7 schools)	11	4	5	3	3

[1] Dental school attended not available for 4 dentists and year of graduation for 2 dentists. Percents based on known totals.

A fairly substantial proportion of Idaho's dentists are recent dental school graduates. More than one-third have completed their dental education since 1955, as compared to less than one-fourth who received their dental degrees prior to World War II. The dental school at the University of Washington, which graduated its first class in 1950, has become the primary source of dentist supply in recent years, providing one-fourth of the State's dentists who graduated after 1955. At the same time the contribution of the University of Oregon has progressively decreased over the years.

DISTRIBUTION OF DENTISTS

Idaho's dentists are unevenly distributed geographically, with two-thirds of the licensed dentists located in only 8 of the State's 44 counties. The Boise City metropolitan area (Ada County), with 59 dentists, has 19 percent of the State's supply, and the 7 nonmetropolitan counties with at least 10,000 persons in their central cities have among them 150 dentists, or 48 percent of the total dental force. Three of these nonmetropolitan counties--Bonneville, Bannock and Canyon--have at least 25 dentists, and two other counties--Twin Falls and Nez Perce--have at least 20 dentists.

Distribution of Idaho Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	44	309	100
Boise City metropolitan area	1	59	19
Nonmetropolitan counties	43	250	81
Central city 10,000-49,999	7	150	48
Central city 2,500- 9,999	17	73	24
Central city under 2,500	19	27	9

* See Appendix Table for definition of metropolitan area and presentation of individual county data.

The 36 nonmetropolitan counties comprising the two groups of counties with less than 10,000 persons in their central cities have one-third of the State's dentist supply. There are 73 dentists in the 17 counties having between 2,500 and 9,999 persons in their central cities, while only 27 dentists are scattered among the 19 counties with central cities of less than 2,500 population. Only seven of these 36 counties have as many as 5 dentists, and 12 have fewer than 2 dentists.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of dentists in Idaho is 43.0 years. Almost one-fourth (70 dentists) are under 35, and more than a third (111 dentists) are between 35 and 44 years of age. On the other hand, a sizeable proportion, approximately one-fourth, are 55 or over. About 13 percent of the dentists are at least 65 years of age, including 5 percent who have reached the age of 70.

Median Age and Age Distribution, by County Group

County group	Median age	Percent of dentists			
		Under 35	35-44	45-54	55 & over
All counties	43.0	23	36	18	23
Boise City metropolitan area	39.8	30	31	24	15
Nonmetropolitan counties	43.4	21	37	17	25
Central city 10,000-49,999	44.2	18	36	23	23
Central city under 10,000	41.9	25	38	9	28

Dentists in the Boise City metropolitan area, with a median age of 39.8 years, are more than four years younger than dentists in the group of counties with central cities of 10,000 or more persons, where the median age is 44.2 years. Almost one-third of the dentists in Boise City are under 35, while only 15 percent are 55 years of age or older. By comparison, less than one-fifth of the dentists in counties having central cities of 10,000 or more population are under 35 years of age, while almost one-fourth have reached the age of 55.

Dentists in the group of counties with central cities of less than 10,000 inhabitants have a median age of 41.9 years, slightly under the State average. Even though one-fourth of these dentists are under the age of 35, a substantial proportion, almost three dentists in every 10, are at least 55 years of age.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 309 licensed dentists in Idaho, 286, or 93 percent, are active in their profession, giving Idaho one professionally active dentist for every 2,439 persons. There is one professionally active dentist for every 1,827 persons in the Boise City metropolitan area, a ratio substantially better than the State average. The group of seven nonmetropolitan counties with 10,000 or more inhabitants in their central cities have one dentist for every 2,034 persons, a ratio slightly higher than that of the Boise City metropolitan area but still considerably below the State average. Among these counties three have persons-per-dentist ratios under 2,000--Nez Perce (1,460), Bonneville (1,886) and Bannock (1,967).

Number of Persons per Active Dentist in Idaho

County group*	Professionally active dentists	Population	Persons per dentist
Total	286	697,500	2,439
Boise City metropolitan area	56	102,300	1,827
Nonmetropolitan county groups	230	595,200	2,588
Central city 10,000-49,999	143	290,900	2,034
Central city 2,500- 9,999	66	221,900	3,362
Central city under 2,500	21	82,400	3,924

* See Appendix Table for individual county data.

Persons-per-dentist ratios are much less favorable in the two groups of counties with less than 10,000 persons in their central cities. The 17 counties with central city populations between 2,500 and 9,999 have an average of 3,362 persons per dentist, while the 19 counties with central cities of less than 2,500 inhabitants have an even less favorable ratio of 3,924 persons for every active dentist. Among these 36 counties, 18 have ratios exceeding 3,000 persons per dentist, including five counties with ratios in excess of 5,000. Another six counties have no active dentists, according to available information.

UTILIZATION OF AUXILIARIES

More than nine out of every ten dental practitioners in Idaho (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel, including 86 percent who employ at least one auxiliary on a full-time basis. The most frequently employed auxiliary is the dental assistant. Eighty-seven percent of the practitioners reported the use of an assistant, including 82 percent who utilize at least one full time. About one-fourth of the dentists employ secretaries or receptionists, usually on a full-time basis. Dental hygienists and laboratory technicians are employed by fewer dentists, usually only part time.

Idaho Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed by dentists	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time auxiliary (or more)	With only part-time auxiliaries
Total	257 [1/]	100	86	6
One or more auxiliaries	229	92	86	6
Assistant	217	87	82	5
Hygienist	29	12	3	9
Laboratory technician	14	6	1	5
Secretary or receptionist	60	24	16	8
Other type of personnel	6	2	1	1
No auxiliary	20	8	-	-

1/ Includes 8 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is less frequent among the older dentists. Ninety-five percent of dental practitioners under the age of 55 reported employment of some type of auxiliary. The proportion utilizing auxiliaries decreases to 73 percent among dentists 55 to 64 years of age and to 50 percent among dentists 65 and over.

About one-fifth of the responding dental practitioners in Idaho reported one or more vacant positions for auxiliary personnel. Of these dentists, about 38 percent indicated vacancies for full-time hygienists and 19 percent for full-time dental assistants.

OTHER SURVEY FINDINGS

- Multiple licensure is fairly common in Idaho, with three-fifths of the respondents located in the State holding more than one license. Forty-two percent indicated licensure in at least one additional state and 18 percent in two or more other states. Of those dentists registered in Idaho but located in another state, a relatively high proportion--50 percent--are licensed in two or more states other than Idaho.

- More than one-half of the licenses held in states outside of Idaho are held in the nearby states of California, Oregon and Washington. An additional one-fourth are maintained in two other nearby states, Utah and Montana, and in the more distant states of Missouri, Nebraska and Minnesota.

- One of every six survey respondents located in Idaho, 45 dentists, reported that they had completed one year or more of advanced training after receiving their dental degree. Sixteen dentists reported completion of advanced clinical training as residents or interns, and 34 dentists completed academic training as graduate or postgraduate students. Five dentists completed both academic and clinical training.

- Dentists reporting on time spent in providing patient care devoted an average of 41.2 hours per week to this activity for 47.6 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

- About 9 percent of the practitioners reported they limit their practice to a dental specialty, primarily to orthodontics. Seventeen percent of the dentists in the Boise City metropolitan area and in Bannock and Bonneville Counties, the two nonmetropolitan counties with central cities of 25,000-49,999 population, limit their practices, as compared to only 5 percent in the remainder of the State.

February 1968.

APPENDIX TABLE

Selected Data on Dentists in Idaho, by Location

Area and county	Civilian dentists					Profes-sionally active	Population[1/] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965				
				Under 35 years	55 years or more			
All counties	309	278	31	70	72	286	697.5	2,439
Boise City metropolitan area[2/]	59	52	7	17	9	54	102.3	1,827
Ada	59	52	7	17	9	56	102.3	1,827
Nonmetropolitan counties[3/]	250	226	24	53	63	230	595.2	2,588
Central city 25,000-49,999	57	51	6	10	10	55	105.9	1,925
Bannock	28	26	2	4	5	27	53.1	1,967
Bonneville	29	25	4	6	5	28	52.8	1,886
Central city 10,000-24,999	93	87	6	17	25	88	185.0	2,102
Canyon	28	27	1	6	6	26	60.0	2,308
Kootenai	13	12	1	-	3	13	31.7	2,438
Latah	8	8	-	1	2	8	21.2	2,650
Nez Perce	20	18	2	4	8	20	29.2	1,460
Twin Falls	24	22	2	6	6	21	42.9	2,043
Central city 5,000-9,999	25	23	2	9	5	24	86.7	3,612
Bingham	9	8	1	3	2	9	30.6	3,400
Cassia	6	5	1	3	1	6	16.7	2,783
Elmore	3	3	-	-	-	3	19.5	6,500
Shoshone	7	7	-	3	2	6	19.9	3,317
Central city 2,500-4,999	48	41	7	10	15	42	135.2	3,219
Bear Lake	3	3	-	-	2	3	7.2	2,400
Bonner	7	6	1	2	3	6	15.9	2,650
Franklin	3	3	-	-	1	3	7.8	2,600
Fremont	3	3	-	1	1	2	8.3	4,150
Gem	5	2	3	2	-	4	9.2	2,300

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Idaho, by Location

Area and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35 years	55 years or more			
Nonmetropolitan counties (cont'd.)								
Central city 2,500-4,999 (cont'd.)								
Gooding	3	3	-	1	1	2	8.9	4,450
Idaho	4	4	-	1	1	4	14.5	3,625
Jerome	5	3	2	1	3	3	11.6	3,867
Lemhi	2	2	-	-	-	2	5.6	2,800
Madison	4	4	-	-	1	4	9.5	2,375
Minidoka	5	5	-	1	1	5	16.0	3,200
Payette	3	2	1	1	1	3	12.5	4,167
Washington	1	1	-	-	-	1	8.2	8,200
Central city under 2,500	27	24	3	7	8	21	82.4	3,924
Adams	2	1	1	-	2	-	2.8	-
Benewah	4	4	-	-	1	3	5.9	1,967
Blaine	1	1	-	-	-	1	4.2	4,200
Boise	-	-	-	-	-	-	1.5	-
Boundary	1	1	-	-	-	1	5.7	5,700
Butte	-	-	-	-	-	-	3.8	-
Camas	-	-	-	-	-	-	0.8	-
Caribou	4	4	-	2	1	3	6.0	2,000
Clark	-	-	-	-	-	-	0.9	-
Clearwater	3	2	1	2	1	3	8.6	2,867
Custer	1	1	-	-	-	1	2.8	2,800
Jefferson	2	2	-	-	1	2	12.2	6,100
Lewis	2	2	-	1	-	1	4.5	4,500
Lincoln	2	1	1	-	1	1	3.4	3,400
Oneida	1	1	-	-	1	1	3.1	3,100

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Idaho, by Location

Area and county	Civilian dentists					Professionally active	Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965				
				Under 35 years	55 years or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city under 2,500 (cont'd.)								
Owyhee	1	1	-	-	-	1	6.4	6,400
Power	1	1	-	1	-	1	4.1	4,100
Teton	-	-	-	-	-	-	2.4	-
Valley	2	2	-	1	-	2	3.3	1,650

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2/ The Boise City area, including all of Ada County, is defined as a Standard Metropolitan Statistical Area as established by the U.S. Bureau of the Budget, Office of Statistical Standards.

3/ Counties not included within a SMSA as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN ILLINOIS

During the 1966 registration period, 8,181 dentists registered with the State of Illinois Department of Registration and Education. Over three-fourths of the registered dentists were civilians located in Illinois, another 18 percent were civilians located in other states, and 5 percent were on active duty in the armed forces.

Location and Military Status of Dentists
Licensed in Illinois

Location and military status	All dentists	Percent of dentists
Total licensed	8,181	100
Respondents	7,071	86
Nonrespondents	1,110	14
Total licensed	8,181	100
Civilians in Illinois	6,316	77
Respondents	5,472	-
Nonrespondents	844	-
Civilians in another state	1,450	18
On active duty with armed forces	391	5
Not reported	24	*

* Less than one-half of one percent.

The survey questionnaire was completed by 7,071 dentists, 86 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the State of Illinois Department of Registration and Education or from the 1966 American Dental Directory published by the American Dental Association.

PROFESSIONAL TRAINING

Over four-fifths of Illinois' dentists graduated from dental schools located in Illinois, including 38 percent who received their dental education at Loyola University, 22 percent who are graduates of the University of Illinois and 21 percent who came from Northwestern University. Ten other dental schools in adjacent states have trained an additional 14 percent of Illinois' dentists, including two Missouri schools, St. Louis and Washington Universities, which have between them trained 10 percent of the dentists in the State.

School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	6,316[1]	6,184	1,231	1,796	3,103
		(Percent distribution by school)			
Schools in Illinois	5,016	81	81	83	80
Loyola University	2,326	38	30	34	43
University of Illinois	1,352	22	37	28	12
Northwestern University	1,338	21	14	21	25
Schools in adjacent states	841	14	12	12	15
St. Louis University	364	6	4	6	7
Washington University	233	4	3	3	4
8 other schools	244	4	5	3	4
37 schools in other states	327	5	7	5	5

[1] Dental school attended not available for 132 dentists and year of graduation for 186 dentists. Percents based on totals for whom the data are known.

Only one-fifth of Illinois' dentists graduated from dental school within the last 10 years, while fully one-half graduated before World War II. Although the proportionate contribution of the three Illinois schools combined has remained relatively constant through the years, the University of Illinois has gradually replaced Loyola as the primary source of dentist supply, with its proportion increasing from 12 percent of the dentists who graduated before World War II to 37 percent of those who graduated within the last 10 years. Like Loyola, Northwestern has also shown a notable decrease over the years in its relative contribution of dentists to the State.

DISTRIBUTION OF DENTISTS

Eighty-five percent of the licensed dentists in Illinois are located in the nine metropolitan areas of the State. The 6-county Chicago area has more than seven-tenths of the dental force, 4,555 dentists, the vast majority of whom are located in Cook County. The areas of East St. Louis and Peoria have the next largest dental forces, even though each accounts for only about 3 percent of the State supply. Another 2 percent are located in the Rockford metropolitan area. The five remaining metropolitan areas, Rock Island-Moline, Springfield, Champaign-Urbana, Decatur and Bloomington-Normal, each have about one percent of Illinois' dentists.

Distribution of Dentists

County group*	Number of counties	Number of dentists	Percent of dentists
Total	102	6,316 1/	100
Chicago metropolitan area	6	4,555	72
Other metropolitan areas	13	815	13
East St. Louis area	2	180	3
Peoria area	3	156	3
Rockford area	2	128	2
Rock Island-Moline area	2	94	1
Springfield area	1	73	1
Champaign-Urbana area	1	73	1
Decatur area	1	57	1
Bloomington-Normal area	1	54	1
Nonmetropolitan counties	83	936	15
Central city 10,000-49,999	19	468	7
Central city 5,000- 9,999	26	270	4
Central city 2,500- 4,999	23	158	3
Central city under 2,500	15	40	1

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

1/ County location not available for 10 dentists.

Only 15 percent of the State's dentists are located in the 83 nonmetropolitan counties. These dentists tend to be concentrated in the counties which contain a relatively large city. One-half of the dentists in nonmetropolitan counties are located in the 19 counties with a central city of 10,000 or more population. The 64 counties which do not have a city this large account for only 8 percent of the dentists in the State.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of the 6,127 dentists for whom age was obtainable is a rather high 51.0 years. Only 26 percent of Illinois' dentists, 1,598, are under 40 years of age, including just 16 percent who are under 35. On the other hand, more than two-fifths, or 2,592 dentists, are 55 years or over. Almost one in every five, or 1,180 dentists, are 65 years old or more, including 634 who have reached the age of 70.

Median Age and Age Distribution, by County Group

County group	Median age	Percent of dentists Under 40	 40-54	 55 and over
Total	51.0	26	32	42
Chicago metropolitan area	51.4	26	32	42
Other metropolitan areas	47.3	30	35	35
Champaign-Urbana area	43.3	39	33	28
Springfield area	46.1	28	39	33
Rockford area	46.4	38	31	31
Rock Island-Moline area	47.5	26	34	40
Peoria area	48.0	29	34	37
Bloomington-Normal area	48.1	27	38	35
East St. Louis area	49.3	29	33	38
Decatur area	50.5	20	46	34
Nonmetropolitan counties	52.3	25	30	45
Central city 10,000-49,999	49.7	26	34	40
Central city 5,000- 9,999	53.2	24	29	47
Central city 2,500- 4,999	55.9	22	27	51
Central city under 2,500	61.4	21	11	68

The median age of dentists in metropolitan areas is 50.8 years, slightly lower than the 52.3 year median for dentists in the nonmetropolitan counties. Among the metropolitan areas, Champaign-Urbana has the youngest dentists, with a median age of 43.3 years. Almost 40 percent of the dentists in this area are under 40 years of age, and only 28 percent are 55 or over. In contrast, dentists in the Chicago area are the oldest as a group, with a median age of 51.4. Only one-fourth of these dentists are under 40, and more than two-fifths have reached the age of 55.

Dentist ages in nonmetropolitan counties tend to increase rapidly as the size of the central city decreases. The median age of dentists in counties with central cities of at least 10,000 population is 49.7 years, compared to a median age of 55.9 in counties containing a central city of 2,500-4,999 inhabitants and 61.4 years in counties with less than 2,500 persons in their central cities.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 6,316 dentists in Illinois, 5,994, or 95 percent, are active in their profession, giving Illinois one professionally active dentist for every 1,777 persons. There is one dentist for every 1,536 persons in the Chicago metropolitan area, while the remainder of the State has a much less favorable ratio of one dentist for every 2,400 persons.

Number of Persons per Active Dentist

County group	Professionally active dentists	Population	Persons per dentist
Total	5,994	10,649,400	1,777
Chicago metropolitan area	4,323	6,641,800	1,536
Other metropolitan areas	770	1,834,200	2,382
Bloomington-Normal area	48	88,800	1,850
Rockford area	122	251,100	2,058
Champaign-Urbana area	67	144,600	2,158
Springfield area	68	151,900	2,234
Peoria area	148	332,400	2,246
Decatur area	54	125,900	2,331
Rock Island-Moline area	88	209,800	2,384
East St. Louis area	175	529,700	3,027
Nonmetropolitan counties	896	2,173,400	2,426
Central city 10,000-49,999	450	1,034,600	2,299
Central city 5,000- 9,999	260	629,800	2,422
Central city 2,500- 4,999	150	401,400	2,676
Central city under 2,500	36	107,600	2,989

Cook County, the hub of the Chicago metropolitan area, has the best ratio in the State, 1,487 persons per active dentist, while the other five counties in this area have an average persons-per-dentist ratio of 1,788. Among the metropolitan areas, exclusive of Chicago, only Bloomington-Normal, with 1,850 persons per dentist, has a ratio under 2,000. In six of the metropolitan areas, the ratios range between 2,000 and 2,400, and in one area, East St. Louis, the number of persons per dentist exceeds 3,000.

Among the 83 nonmetropolitan counties of the State, there are 18 counties with persons-per-dentist ratios under 2,000, yet 23 counties have ratios exceeding 3,000 persons for every dentist. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 10,000 or more population have an average persons-per-dentist ratio of approximately 2,300, while counties with central cities of less than 2,500 inhabitants average nearly 3,000 persons per dentist.

UTILIZATION OF AUXILIARIES

A little over three-fifths of the responding practitioners in Illinois (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 54 percent of all practitioners, including 46 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 20 percent of the dentists with about two-thirds of these dentists utilizing such personnel full time. Only 8 percent of the dentists employ dental hygienists and 5 percent employ dental technicians. Dentists are more likely to employ hygienists and laboratory technicians on a part-time basis compared to other auxiliary personnel.

Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time personnel
Total	5,201[1]	100	53	9
With one or more auxiliaries	3,102	62	53	9
With assistant	2,713	54	46	8
With hygienist	411	8	3	5
With laboratory technician	254	5	2	3
With secretary or receptionist	988	20	13	7
With other type of personnel	102	2	1	1
With no auxiliary	1,917	38	-	-

[1] Includes 182 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with age of dentists and is more frequent among young dentists. Eighty percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 57 percent among dentists 45 to 64 years old and to 33 percent among dentists 65 and over. Dentists in the early years of their practice generally do not reach peak utilization of assistants until they are 30 years of age and of hygienists until age 35.

OTHER SURVEY FINDINGS

***Ninety-four percent of the responding professionally active dentists in Illinois are primarily engaged in private practice. Two percent are on the staffs of dental schools, another two percent are employed by governmental agencies, and the remainder are engaged in other dental activities, such as taking advanced training.

***At least one part-time dental activity in addition to their principal employment was reported by 11 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other secondary dental activities were reported, including employment by another dentist and serving in voluntary agencies.

***Dentists reporting time spent in providing patient care devoted an average of 40.3 hours per week to this activity for 47.0 weeks during the year preceding the survey. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

***About 9 percent of the practitioners reported they limit their practices to a dental specialty, primarily orthodontics or oral surgery. Only 5 percent of the dentists in nonmetropolitan counties limit their practices, compared to 9 percent in the Chicago metropolitan area and 12 percent in the eight other metropolitan areas combined.

***One fourth of the 1,193 responding civilian dentists who are licensed in Illinois but located in another state are in one of the five adjacent states, primarily Missouri and Wisconsin. Another 30 percent of the out-of-state dentists are located in California or Florida, and the remainder are scattered in 39 other states and the District of Columbia.

***About one out of every five out-of-state dentists reported that they had been professionally active in Illinois immediately prior to assuming their present location in another state. More than two-fifths of the 249 out-migrant dentists are now located in California or Florida, and the remaining three-fifths moved to 32 other states, primarily those adjacent to Illinois.

November 1967.

APPENDIX TABLE

Selected Data on Dentists in Illinois, by Location

Area and county	Civilian dentists					Profes-sionally active	Population[1/] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965				
				Percent under 40	Percent 55 or more			
All counties	6,316	5,472	844	26	42	5,994	10,649.4	1,777
All metropolitan areas[2/]	5,370	4,661	709	26	42	5,093	8,476.0	1,664
Chicago area	4,555	3,957	598	26	43	4,323	6,641.8	1,536
Cook	3,824	3,316	508	23	46	3,615	5,376.1	1,487
Du Page	235	204	31	45	23	227	375.6	1,655
Kane	155	139	16	29	34	151	231.6	1,534
Lake	191	168	23	38	30	184	341.7	1,857
McHenry	54	46	8	40	25	51	98.5	1,931
Will	96	84	12	40	29	95	218.3	2,298
East St. Louis area[3/]	180	161	19	29	38	175	529.7	3,027
Madison	93	85	8	33	35	91	244.7	2,689
St. Clair	87	76	11	24	42	84	285.0	3,393
Peoria area	156	135	21	29	37	148	332.4	2,246
Peoria	109	96	13	28	39	103	196.7	1,910
Tazewell	38	30	8	30	33	36	109.6	3,044
Woodford	9	9	-	33	33	9	26.1	2,900
Rockford area	128	111	17	35	33	122	251.1	2,058
Winnebago	115	102	13	38	32	109	229.2	2,103
Boone	13	9	4	8	46	13	21.9	1,685
Rock Island-Moline area[4/]	94	85	9	28	41	88	209.8	2,384
Rock Island	68	63	5	26	40	64	158.6	2,478
Henry	26	22	4	31	46	24	51.2	2,133

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Illinois, by Location

Area and county	Civilian dentists					Profes-sionally active	Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965				
				Percent under 40	Percent 55 or more			
All metropolitan areas[2] (cont'd.)								
Springfield area	73	56	17	28	32	68	151.9	2,234
Sangamon	73	56	17	28	32	68	151.9	2,234
Champaign-Urbana area	73	63	10	39	29	67	144.6	2,158
Champaign	73	63	10	39	29	67	144.6	2,158
Decatur area	57	49	8	20	34	54	125.9	2,331
Macon	57	49	8	20	34	54	125.9	2,331
Bloomington-Normal area	54	44	10	27	35	48	88.8	1,850
McLean	54	44	10	27	35	48	88.8	1,850
All nonmetropolitan counties[5]	936	801	135	24	45	896	2,173.4	2,426
Central city 25,000-49,999	164	140	24	26	34	159	385.5	2,424
Adams	30	23	7	28	34	29	70.3	2,424
Kankakee	41	37	4	27	41	38	101.5	2,671
Knox	23	21	2	32	32	22	64.8	2,945
Stephenson	31	24	7	24	31	31	48.4	1,561
Vermilion	39	35	4	21	31	39	100.5	2,577
Central city 10,000-24,999	304	258	46	26	43	291	649.1	2,231
Coles	25	21	4	21	38	25	43.9	1,756
De Kalb	26	21	5	16	44	25	61.9	2,476

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Illinois, by Location

Area and county	Civilian dentists: Total	Respond-ents	Non-respond-ents	Age in 1965: Percent under 40	Age in 1965: Percent 55 or more	Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
All nonmetropolitan counties 5/ (cont'd.)								
Central city 10,000-24,999 (cont'd.)								
Fulton	14	13	1	23	31	14	41.1	2,936
Jackson	25	22	3	32	36	25	44.6	1,784
Jefferson	15	13	2	14	64	14	30.6	2,186
La Salle	56	45	11	37	37	54	115.3	2,135
Lee	21	17	4	14	57	21	39.8	1,895
Logan	12	10	2	8	50	11	34.9	3,173
McDonough	13	11	2	33	42	12	29.3	2,442
Marion	17	13	4	29	41	16	38.5	2,406
Morgan	23	21	2	27	45	20	37.4	1,870
Warren	11	9	2	45	27	11	21.5	1,954
Whiteside	26	25	1	23	35	26	64.4	2,477
Williamson	20	17	3	25	65	17	45.9	2,700
Central city 5,000-9,999	270	231	39	24	47	260	629.8	2,422
Alexander	4	2	2	50	50	3	14.3	4,767
Bureau	16	16	-	20	53	16	37.4	2,338
Cass	9	7	2	11	33	9	14.2	1,578
Christian	15	14	1	23	38	15	36.4	2,427
Clay	4	4	-	-	75	4	15.2	3,800
Crawford	10	8	2	22	67	10	20.6	2,060
De Witt	8	7	1	29	57	8	17.4	2,175
Edgar	10	9	1	33	11	9	22.1	2,456
Effingham	14	12	2	29	50	13	23.7	1,823
Fayette	10	7	3	33	44	9	20.8	2,311
Franklin	16	13	3	50	36	16	36.1	2,256

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Illinois, by Location

Area and county	Civilian dentists: Total	Civilian dentists: Respondents	Civilian dentists: Non-respondents	Age in 1965: Percent under 40	Age in 1965: Percent 55 or more	Professionally active	Population[1/] (in 000's)	Persons per active dentist
All nonmetropolitan counties[5/] (cont'd.)								
Central city 5,000-9,999 (cont'd.)								
Grundy	12	10	2	18	64	12	23.7	1,975
Iroquois	11	9	2	30	50	11	34.2	3,109
Jersey	5	5	-	20	60	5	18.0	3,600
Lawrence	7	5	2	43	29	5	17.6	3,520
Livingston	16	15	1	12	56	16	41.5	2,594
Macoupin	19	18	1	21	53	19	43.1	2,268
Massac	5	5	-	40	40	5	14.7	2,940
Montgomery	12	11	1	18	64	11	30.6	2,782
Ogle	20	15	5	11	37	19	40.4	2,126
Perry	8	8	-	25	50	8	18.0	2,250
Richland	10	9	1	22	22	10	15.9	1,590
Saline	15	12	3	20	47	14	23.2	1,657
Wabash	4	3	1	25	75	3	13.5	4,500
Wayne	4	3	1	-	67	4	18.6	4,650
White	6	4	2	20	40	6	18.6	3,100
Central city 2,500-4,999	158	138	20	21	52	150	401.4	2,676
Bond	8	5	3	14	71	7	13.9	1,986
Carroll	10	9	1	20	50	10	19.8	1,980
Clark	6	6	-	33	50	6	16.1	2,683
Clinton	8	4	4	-	75	6	24.5	4,083
Douglas	10	8	2	30	40	10	20.5	2,050
Ford	7	7	-	14	43	6	16.9	2,817
Greene	6	5	1	17	33	6	16.8	2,800
Hamilton	3	3	-	-	67	3	8.9	2,967

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Illinois, by Location

Area and county	Civilian dentists							
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active	Population[1/] (in 000's)	Persons per active dentist
				Percent under 40	Percent 55 or more			
All nonmetropolitan counties[5/] (cont'd.)								
Central city 2,500-4,999 (cont'd.)								
Hancock	10	9	1	10	70	9	24.0	2,667
Jasper	3	3	-	-	50	2	10.8	5,400
Jo Daviess	7	7	-	14	57	7	21.8	3,114
Kendall	8	7	1	62	25	8	20.0	2,500
Mason	6	6	-	50	33	6	15.1	2,517
Mercer	4	3	1	25	25	4	17.1	4,275
Monroe	8	7	1	43	29	8	16.5	2,062
Moultrie	7	6	1	43	29	7	13.7	1,957
Piatt	5	4	1	-	60	5	15.4	3,080
Pike	7	7	-	-	71	7	19.8	2,828
Randolph	11	11	-	18	54	11	29.1	2,645
Schuyler	3	2	1	33	33	2	8.3	4,150
Shelby	7	7	-	-	100	6	22.9	3,817
Union	7	5	2	14	57	7	16.4	2,343
Washington	7	7	-	29	57	7	13.1	1,871
Central city under 2,500	40	34	6	21	68	36	107.6	2,989
Brown	4	3	1	-	50	3	5.8	1,933
Calhoun	2	2	-	-	100	2	5.5	2,750
Cumberland	4	3	1	25	75	2	9.6	4,800
Edwards	3	3	-	67	-	3	7.3	2,433
Gallatin	1	1	-	100	-	1	6.6	6,600
Hardin	1	1	-	-	100	1	5.2	5,200
Henderson	1	1	-	-	100	1	8.1	8,100
Johnson	4	3	1	25	75	3	6.2	2,067

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Illinois, by Location

Area and county	Civilian dentists: Total	Respondents	Nonrespondents	Age in 1965: Percent under 40	Age in 1965: Percent 55 or more	Professionally active	Population[1] (in 000's)	Persons per active dentist
All nonmetropolitan counties[5] (cont'd.)								
Central city under 2,500 (cont'd.)								
Marshall	7	6	1	43	57	7	13.4	1,914
Menard	4	4	-	-	75	4	9.1	2,275
Pope	1	1	-	-	100	1	3.4	3,400
Pulaski	1	1	-	-	-	1	9.1	9,100
Putnam	1	-	1	-	100	1	4.5	4,500
Scott	3	2	1	-	100	3	5.9	1,967
Stark	3	3	-	-	100	3	7.9	2,633

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[2] Illinois counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's statistics are presented only for dentists located in the Illinois portion of the SMSA.

[3] Illinois part of the St. Louis SMSA.

[4] Illinois part of the Davenport-Rock Island-Moline SMSA.

[5] Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

NOTE: County location not available for 10 dentists.

DENTISTS LICENSED IN INDIANA

During the 1965 registration period, 2,823 dentists registered with the Indiana State Board of Dental Examiners. Of these dentists, 76 percent were civilians located in Indiana, another 20 percent were civilians located in other states, and 4 percent were on active duty with the Armed Forces.

The survey questionnaire was completed by 2,532 dentists, 90 percent of all those registered. The data provided by the survey respondents has been supplemented when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Indiana State Board of Dental Examiners or from the 1966 American Dental Directory, published by the American Dental Association.

Location and Military Status of Dentists Licensed in Indiana

Location and military status	All dentists	Percent of dentists
Total licensed	2,823	100
Respondents	2,532	90
Nonrespondents	291	10
Total licensed	2,823	100
Civilians in Indiana	2,142	76
Respondents	1,976	-----
Nonrespondents	166	-----
Civilians in other states	563	20
On active duty with Armed Forces	118	4

About one-third of all survey respondents hold a license to practice dentistry in one or more other states. Only 17 percent of the dentists located in Indiana hold more than one license, with 15 percent licensed in one other state and a mere 2 percent licensed in two or more other states. The proportion of out-of-state dentists holding multiple licenses is considerably greater; 23 percent hold two or more licenses in addition to their Indiana license.

PROFESSIONAL TRAINING

More than three-fourths of Indiana's 2,142 dentists graduated from Indiana University School of Dentistry. Another 15 percent of the dentists are graduates of 9 dental schools located in adjacent states. Among these schools, Loyola University of Chicago and Northwestern University are the largest contributors, each having trained approximately 5 percent of the State's dentist supply. The University of Louisville is the only other school to contribute as much as 3 percent of the dental force. The remaining 9 percent of the State's dentists are graduates of 29 other dental schools located in more distant states.

Dental School Attended and Year of Graduation for Dentists in Indiana

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	2,142[1/]	--	566	659	909
		(Percent distribution by school)			
Indiana University	1,624	76	84	72	75
Schools in adjacent states	328	15	8	17	18
Loyola University of Chicago	109	5	3	7	5
Northwestern University	97	5	1	5	6
7 other schools	122	5	4	5	7
29 schools in other states	182	9	8	11	7

[1/] *Dental school attended and year of graduation not available for 8 dentists. Percents are based on data supplied.*

The proportionate contribution of Indiana University to the State dentist supply has increased somewhat in recent years. Approximately 84 percent of the dentists in the State who graduated since 1955 received their dental education at this school, compared to 74 percent of those who graduated in earlier years. At the same time, the contribution of schools in adjacent states has declined considerably.

Some 17 percent of the survey respondents, 340 dentists, indicated that they had taken some type of advanced training after receiving their dental degree. Of 174 dentists reporting advanced clinical training, 108 had completed an internship and 66 a residency. Among the 232 dentists who have had advanced academic training, 126 reported having earned a master's or other advanced degree, and another 106 dentists received no additional degrees but completed one or more years of postgraduate study. A total of 66 dentists completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Almost seven in every ten of the 2,142 dentists in Indiana are located in the 11 metropolitan areas of the State. The 8-county Indianapolis area alone has 592 dentists, 27 percent of the total dental force. The vast majority of these dentists, more than four-fifths, are in Marion County, where Indianapolis is located. The Gary-Hammond area has the second largest dental force, with 249 dentists, or 12 percent of the total supply. The metropolitan areas of South Bend and Fort Wayne have the third and fourth largest dental forces in the State, with 7 and 6 percent, respectively. The Indiana portion of the interstate Evansville area and the Terre Haute area each have 4 percent of the State's dentist supply. The remaining five metropolitan areas—Lafayette, Anderson, Muncie, and the Indiana portions of the interstate Louisville and Cincinnati areas—have among them 185 dentists, 9 percent of the total supply.

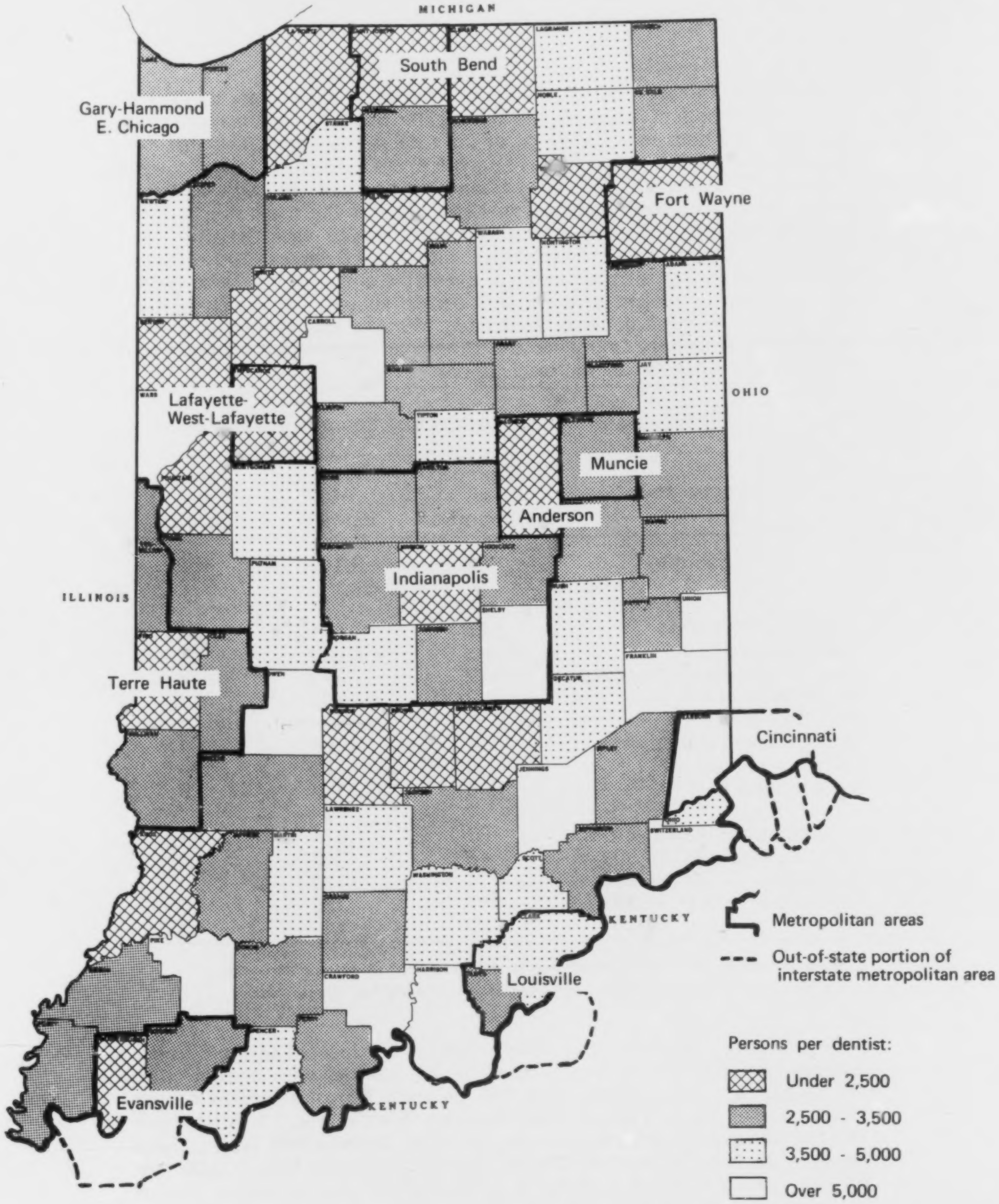
Distribution of Indiana Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	92	2,142	100
Metropolitan areas	25	1,471	69
Indianapolis area	8	592	27
Gary-Hammond-E. Chicago area	2	249	12
South Bend area	2	148	7
Fort Wayne area	1	122	6
Evansville area (Ind. part)	2	96	4
Terre Haute area	4	79	4
5 other areas	6	185	9
Nonmetropolitan counties	67	671	31
Central city 25,000-49,999	6	217	10
Central city 10,000-24,999	14	179	8
Central city 5,000- 9,999	17	135	6
Central city under 5,000	30	140	7

* *See Appendix Table for complete listing and definition of metropolitan areas, explanation of interstate areas, and presentation of individual county data.*

Approximately one-third of Indiana's dentists are located in the 67 nonmetropolitan counties of the State. The 20 counties with central cities of 10,000 or more persons have 396 dentists, almost one-fifth of the State's dental force. Two of these counties—Elkhart and La Porte—have at least 50 dentists, and four—Grant, Howard, Monroe, and Wayne—have between 25 and 30 dentists. The 47 counties with less than 10,000 persons in their central cities have 13 percent of the dentist supply. Only 8 of these counties have as many as 10 dentists, while 18 have fewer than 5 dentists.

NUMBER OF PERSONS PER DENTIST IN INDIANA, BY COUNTY


MICHIGAN
South Bend
Gary-Hammond
E. Chicago
Fort Wayne
OHIO
Lafayette-
West-Lafayette
Muncie
Anderson
Indianapolis
ILLINOIS
Terre Haute
Cincinnati
KENTUCKY
Louisville
Evansville
KENTUCKY
Metropolitan areas
Out-of-state portion of interstate metropolitan area
Persons per dentist:
Under 2,500
2,500 - 3,500
3,500 - 5,000
Over 5,000

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 2,142 licensed dentists in Indiana, 2,013, or 94 percent, are active in their profession, giving Indiana one professionally active dentist for every 2,449 persons. There is one dentist for every 2,189 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of one dentist for every 3,033 persons.

Number of Persons per Active Dentist in Indiana

County group *	Professionally active dentists	Population	Persons per dentist
All counties	2,013	4,929,800	2,449
Metropolitan areas	1,393	3,049,200	2,189
Indianapolis area	549	1,021,600	1,861
Gary-Hammond-E. Chicago area	240	627,800	2,616
South Bend area	144	283,600	1,969
Fort Wayne area	117	259,800	2,221
Evansville area (Ind. part)	93	189,900	2,042
Terre Haute area	73	169,200	2,318
5 other areas	177	497,300	2,810
Nonmetropolitan counties	620	1,880,600	3,033
Central city 25,000-49,999	205	516,100	2,518
Central city 10,000-24,999	167	506,100	3,031
Central city 5,000- 9,999	125	421,100	3,369
Central city under 5,000	123	437,300	3,555

* *See Appendix Table for individual county data.*

Among the metropolitan areas, the 8-county Indianapolis area has the most favorable ratio with 1,861 persons per active dentist. Marion County, the hub of the area, has the best ratio in the State, some 1,600 persons per active dentist, while the other seven counties in the area have considerably higher ratios averaging more than 3,000 persons per dentist. Among the other metropolitan areas, only South Bend, with 1,969 persons per dentist, has a ratio under 2,000. The ratios for the Evansville and Lafayette areas, however, are only slightly higher—2,042 and 2,036, respectively. In four areas—Fort Wayne, Terre Haute, Anderson and Gary-Hammond—the ratios range between 2,200 and 2,600. The remaining three areas—Muncie and the Indiana parts of the Louisville and Cincinnati areas—have ratios in excess of 3,300 persons per dentist.

Among the 67 nonmetropolitan counties, there are 11 with persons-per dentist ratios under 2,500, yet 22 counties have ratios exceeding 4,000 persons per dentist, including one county with no active dentist. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 25,000 or more population have an average persons-per-dentist ratio of approximately 2,500, while counties with central cities of less than 5,000 inhabitants average over 3,500 persons per dentist.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of the 2,131 dentists for whom age was obtainable is 46.6 years. Approximately one-third of Indiana's dentists (689) are under 40 years of age, including 20 percent who are under 35. On the other hand, 36 percent (773) are 55 years or over. About one in every six, or 388 dentists, are 65 years old or more, including 211 who have reached the age of 70.

Median Age and Age Distribution of Indiana Dentists,
by County Group

County group	Median age	Percent of dentists Under 40	40-54	55 & over
All counties	46.6	32	32	36
Metropolitan areas	45.5	34	31	35
Indianapolis area	44.4	38	29	33
Gary-Hammond-E. Chicago area	46.1	36	29	35
South Bend area	47.5	27	37	36
Fort Wayne area	43.2	40	28	32
Evansville area (Ind. part)	44.3	31	40	29
Terre Haute area	52.1	18	37	45
5 other areas	46.9	30	34	36
Nonmetropolitan counties	48.8	29	31	40
Central city 25,000-49,999	45.5	34	35	31
Central city 10,000-24,999	51.7	22	32	46
Central city 5,000 - 9,999	51.0	24	33	43
Central city under 5,000	49.0	32	25	43

The median age of dentists in metropolitan areas is 45.5 years, more than three years below the median of 48.8 years for dentists in nonmetropolitan counties. Among the metropolitan areas, Fort Wayne has the youngest dentists, with a median age of 43.2 years. Two-fifths of the dentists in this area are less than 40 years of age, including 28 percent who are under 35. The Indianapolis and Evansville areas have relatively young dentists, with median ages about two years below the average for the State. Dentists in the Terre Haute area are the oldest as a group, with a median age of 52.1 years. Only 18 percent of these dentists are under 40, while 45 percent have reached the age of 55.

Among the nonmetropolitan counties, younger dentists tend to be concentrated in counties with large central cities. The median age of dentists in counties with central cities of 25,000 or more population is 45.5 years, the same as the median for all metropolitan areas combined. Dentists in the nonmetropolitan counties with smaller central cities, however, are on the average about 5 years older, with a median age of over 50 years.

UTILIZATION OF AUXILIARIES

More than three-fourths of the responding dental practitioners in Indiana (i.e., dentists who spend any time working at the chair) report that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 71 percent of the dentists, including 65 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 27 percent of the dentists, with two-thirds of these dentists utilizing such personnel full time. Only 14 percent of the dentists employ dental hygienists and 6 percent employ dental laboratory technicians. A majority of the practitioners who employ hygienists or technicians do so only part time.

Indiana Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	1,845 [1]	100	71	6
One or more auxiliaries	1,372	77	71	6
Assistant	1,267	71	65	6
Hygienist	241	14	5	9
Laboratory technician	111	6	2	4
Secretary or receptionist	480	27	18	9
Other type of personnel	36	2	1	1
No auxiliary	403	23	---	---

[1] *Includes 70 dentists who did not report on auxiliary utilization.*

Use of auxiliaries varies with the age of the dentist and tends to be more frequent among younger dentists. Ninety percent of Indiana dentists under the age of 45 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 73 percent among dentists 45 to 64 years old and to only 40 percent among dentists 65 and over. Young dentists just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age and of hygienists until age 35.

About 15 percent of the dental practitioners in Indiana reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, 38 percent indicated a need for full-time hygienists and 27 percent reported vacancies for full-time dental assistants. More than nine of every 10 dentists reporting a vacancy already employ one or more auxiliaries.

OTHER SURVEY FINDINGS

☐ Ninety-four percent of the responding professionally active dentists in Indiana are primarily engaged in private practice. Two percent are on the staff of the dental school, another two percent are employed by government agencies, and the remaining two percent are engaged in other dental activities, such as taking advanced training.

☐ At least one part-time dental activity in addition to their principal employment was reported by 11 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other activities were reported, including employment by another dentist and working in voluntary agencies.

☐ Dentists reporting time spent in patient care devoted an average of 40.0 hours per week to this activity for 47.3 weeks during the year preceding the survey. About one dentist in eight worked the equivalent of 6 days a week, 48 hours or more, for at least 48 weeks.

☐ About 13 percent of the dentists in Indiana reported that they limit their practice to a dental specialty, primarily orthodontics or oral surgery. Dental specialists are more likely to be located in a metropolitan area than in a nonmetropolitan county. One in every 7 dentists practicing in a metropolitan area limits his practice, whereas in nonmetropolitan counties only one in every 12 dentists does so.

☐ Of the 563 dentists licensed in Indiana but located out-of-state, more than one-third are located in the adjacent states of Illinois, Kentucky, Michigan, or Ohio. An additional 26 percent are in California or Florida. The remaining out-of-state dentists are scattered throughout 33 other states and the District of Columbia.

May 1968.

APPENDIX TABLE

Selected Data on Dentists in Indiana, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 40	55 years or more			
All counties	2,142	1,976	166	689	773	2,013	4,929.8	2,449
Metropolitan areas 2/	1,471	1,359	112	498	506	1,393	3,049.2	2,189
Indianapolis area	592	543	49	221	197	549	1,021.6	1,861
Boone	10	10	---	4	3	10	28.3	2,830
Hamilton	16	16	---	8	4	15	44.1	2,940
Hancock	11	10	1	2	6	9	30.7	3,411
Hendricks	16	16	---	6	6	15	45.6	3,040
Johnson	18	18	---	8	5	17	50.5	2,971
Marion	503	457	46	186	166	468	748.3	1,599
Morgan	8	8	---	4	3	8	38.0	4,750
Shelby	10	8	2	3	4	7	36.1	5,157
Gary-Hammond-E. Chicago area	249	235	14	89	88	240	627.8	2,616
Lake	225	211	14	77	86	216	556.2	2,575
Porter	24	24	---	12	2	24	71.6	2,983
South Bend area	148	135	13	40	53	144	283.6	1,969
Marshall	14	14	---	5	5	13	32.7	2,515
St. Joseph	134	121	13	35	48	131	250.9	1,915
Fort Wayne area	122	108	14	49	39	117	259.8	2,221
Allen	122	108	14	49	39	117	259.8	2,221
Evansville area (Ind. part)	96	93	3	30	28	93	189.9	2,042
Vanderburgh	88	86	2	26	26	86	166.5	1,936
Warrick	8	7	1	4	2	7	23.4	3,343

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Indiana, by Location

County group and county	Civilian dentists						Population (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 40	55 years or more			
Metropolitan areas 2/ (cont'd.)								
Terre Haute area	79	73	6	14	36	73	169.2	2,318
Clay	7	4	3	---	3	7	24.0	3,429
Sullivan	8	8	---	3	3	7	21.0	3,000
Vermillion	6	5	1	---	5	5	16.3	3,260
Vigo	58	56	2	11	25	54	107.9	1,998
Anderson area	56	53	3	15	20	55	131.6	2,393
Madison	56	53	3	15	20	55	131.6	2,393
Louisville area (Ind. part)	36	36	---	9	12	34	121.0	3,559
Clark	17	17	---	5	7	16	67.1	4,194
Floyd	19	19	---	4	5	18	53.9	2,994
Muncie area	36	33	3	11	11	35	118.4	3,383
Delaware	36	33	3	11	11	35	118.4	3,383
Lafayette-West Lafayette area	50	43	7	19	18	47	95.7	2,036
Tippecanoe	50	43	7	19	18	47	95.7	2,036
Cincinnati area (Ind. part)	7	7	---	1	4	6	30.6	5,100
Dearborn	7	7	---	1	4	6	30.6	5,100
Nonmetropolitan counties 3/	671	617	54	191	267	620	1,880.6	3,033
Central city 25,000-49,999	217	198	19	74	67	205	516.1	2,518
Elkhart	56	48	8	21	16	55	115.2	2,095
Grant	25	24	1	9	7	24	80.2	3,342

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Indiana, by Location

County group and county	Civilian dentists Total	Respond-ents	Non-respond-ents	Age in 1965 Under 40	Age in 1965 55 years or more	Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
Nonmetropolitan counties 3/ (cont'd.)								
Central city 25,000-49,999 (cont'd.)								
Howard	29	26	3	8	10	25	75.9	3,036
La Porte	50	48	2	12	20	47	102.9	2,189
Monroe	29	25	4	16	5	28	64.8	2,314
Wayne	28	27	1	8	9	26	77.1	2,965
Central city 10,000-24,999	179	163	16	39	81	167	506.1	3,031
Bartholomew	23	22	1	12	10	23	52.8	2,296
Cass	15	15	---	1	8	13	41.8	3,215
Clinton	10	9	1	1	5	10	31.6	3,160
Daviess	9	7	2	2	4	9	26.4	2,933
Fayette	8	8	---	1	4	8	24.1	3,013
Henry	18	16	2	2	10	17	50.0	2,941
Huntington	11	11	---	2	5	9	35.0	3,889
Jackson	12	9	3	3	6	12	31.3	2,608
Jefferson	8	7	1	1	2	8	24.5	3,063
Knox	21	17	4	7	8	18	42.1	2,339
Lawrence	12	11	1	1	3	10	36.8	3,680
Miami	13	12	1	---	10	13	41.9	3,223
Montgomery	9	9	---	3	2	9	32.9	3,656
Wabash	10	10	---	3	4	8	34.9	4,363
Central city 5,000-9,999	135	128	7	33	58	125	421.1	3,369
Adams	8	8	---	3	2	7	25.9	3,700
Blackford	5	5	---	1	3	5	15.3	3,060
Decatur	6	5	1	3	3	5	21.2	4,240
De Kalb	10	9	1	3	3	9	29.2	3,244

APPENDIX TABLE (Cont'd.)

Selected Data on Dentists in Indiana, by Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 40	55 years or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city 5,000-9,999 (cont'd.)								
Dubois	11	10	1	2	4	10	28.7	2,870
Gibson	10	10	---	2	5	10	29.4	2,940
Greene	9	9	--	4	3	9	25.9	2,878
Jay	6	5	1	1	2	5	23.1	4,620
Kosciusko	17	15	2	5	6	16	44.1	2,756
Noble	7	7	---	1	3	6	29.4	4,900
Perry	6	6	---	---	4	6	17.5	2,917
Posey	6	6	---	1	3	6	19.0	3,167
Putnam	6	5	1	2	3	6	25.6	4,267
Randolph	10	10	---	2	5	9	28.3	3,144
Rush	5	5	---	2	2	5	20.3	4,060
Tipton	6	6	---	---	4	4	16.1	4,025
Wells	7	7	---	1	3	7	22.1	3,157
Central city 2,500-4,999	107	99	8	36	46	95	326.0	3,432
Carroll	3	3	---	2	1	3	17.4	5,800
Fountain	10	9	1	5	4	8	18.7	2,338
Franklin	4	3	1	2	2	3	16.8	5,600
Fulton	8	7	1	2	5	8	17.0	2,125
Harrison	3	3	---	---	2	3	19.3	6,433
Jasper	7	7	---	3	2	7	19.2	2,743
Jennings	3	3	---	1	1	3	18.4	6,133
Martin	4	3	1	1	3	3	10.6	3,533
Orange	6	6	---	3	1	5	17.2	3,440
Owen	3	3	---	1	1	2	11.3	5,650
Parke	5	5	---	2	1	5	15.0	3,000
Pike	2	2	---	1	---	2	12.3	6,150
Ripley	8	8	---	3	4	8	21.7	2,713

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Indiana, by Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965		Professionally active		
				Under 40	55 years or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city 2,500-4,999 (cont'd.)								
Scott	4	4	---	---	1	3	14.9	4,967
Starke	4	4	---	1	2	4	17.9	4,475
Steuben	7	6	1	2	3	6	17.9	2,983
Washington	5	4	1	3	1	4	18.2	4,550
White	10	9	1	2	5	9	20.4	2,267
Whitley	11	10	1	2	7	9	21.8	2,422
Central city - under 2,500	33	29	4	9	15	28	111.3	3,975
Benton	6	6	---	2	4	5	11.7	2,340
Brown	3	2	1	2	1	3	7.2	2,400
Crawford	2	2	---	---	1	1	8.0	8,000
Lagrange	5	4	1	2	1	5	17.9	3,580
Newton	3	3	---	---	2	3	11.6	3,867
Ohio	1	1	---	---	1	1	4.1	4,100
Pulaski	4	4	---	2	1	4	12.3	3,075
Spencer	4	4	---	---	1	4	16.2	4,050
Switzerland	2	---	2	---	1	1	7.1	7,100
Union	3	3	---	1	2	1	6.9	6,900
Warren	---	---	---	---	---	---	8.3	---

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[2] *Indiana counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For interstate SMSA's statistics are presented only for dentists located in the Indiana portion of the Evansville SMSA, Louisville SMSA, and Cincinnati SMSA.*

[3] *Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.*

DENTISTS LICENSED IN IOWA

During the 1965 registration period, 2,211 dentists registered with the Iowa State Board of Dental Examiners. A total of 2,030 dentists responded to the survey, 92 percent of all those registered. Sixty-six percent of the responding dentists are civilians located in Iowa, and 27 percent are civilians located in other States. Five percent of the responding dentists are on active duty with the Armed Forces, and the remaining 2 percent did not report their location or military status.

Location and Military Status of Dentists
Licensed in Iowa

Location and military status	All dentists	Percent of dentists
Total licensed	2,211	100
Respondents	2,030	92
Nonrespondents	181	8
Respondents	2,030	100
Civilians in Iowa	1,340	66
Civilians in another State	553	27
On active duty with Armed Forces	105	5
Not reported	32	2

About 42 percent of the respondents hold a license to practice dentistry in one or more other States. Almost one-fifth of the dentists located in Iowa hold more than one license, with 15 percent licensed in one other State and only 3 percent licensed in two or more other States. Multiple licensure is considerably more common among responding dentists located in other States, with more than one-fourth holding two or more licenses in addition to their Iowa license.

PROFESSIONAL TRAINING

Four-fifths of Iowa's dentists graduated from the University of Iowa College of Dentistry. Another 18 percent are graduates of 10 dental schools located in adjacent States. The principal contributor among these schools, Creighton University, has supplied 9 percent of the State's dental force. The next two largest contributors are Northwestern and St. Louis Universities, each having supplied 2 percent of the dentists. The only other schools to contribute as much as one percent of the dental force are Loyola University of Chicago and the Universities of Minnesota and Missouri.

Only one-fifth of Iowa's dentists graduated from dental school within the last 10 years. In contrast, a very large proportion--about one-half--graduated before World War II. The overall proportionate contributions of both the University of Iowa and the 10 schools in adjacent States have shown virtually no change over the years.

School Awarding Dental Degree, By Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total	1,340 1/	-	254	393	655
		(Percent distribution by school)			
University of Iowa	1,071	80	80	77	82
Schools in adjacent States	242	18	19	20	17
Creighton University	124	9	10	10	9
9 other schools	118	9	9	10	8
15 schools in other areas	21	2	1	3	1

1/ Dental school not reported by 6 dentists and year of graduation by 38 dentists. Percents based on data supplied.

Almost 16 percent of the survey respondents, or 217 dentists, reported they had completed one year or more of advanced training beyond receipt of the dental degree. Of these dentists 120 received advanced clinical training as interns or residents and 148 completed one year or more of advanced academic work as graduate or postgraduate students. These figures include 51 dentists who completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Almost 40 percent of the licensed dentists in Iowa are located in the seven metropolitan areas of the State. The Des Moines metropolitan area has the largest number of dentists, 163, or 12 percent of the State supply. The Cedar Rapids metropolitan area has the second largest dental force, 6 percent of the total, and the areas of Davenport and Waterloo each have 5 percent. Of the three remaining metropolitan areas, Sioux City and Dubuque each have 4 percent of the dentists and the Council Bluffs area has 3 percent.

Distribution by County Group

County group	Number of counties	Number of dentists	Percent of dentists
All counties	98	1,340	100
All metropolitan areas*	7	521	39
Des Moines area	1	163	12
Cedar Rapids area	1	82	6
Davenport area	1	66	5
Waterloo area	1	63	5
Sioux City area	1	57	4
Dubuque area	1	55	4
Council Bluffs area	1	35	3
Nonmetropolitan county groups*	91	819	61
Central city 10,000-49,999	13	314	24
Central city 5,000-9,999	28	240	18
Central city 2,500-4,999	31	179	13
Central city under 2,500	19	86	6

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

The 91 nonmetropolitan counties of the State have a substantial share, over three-fifths, of Iowa's dentist supply. Almost one-fourth of the State's dentists are located in the 13 counties that have 10,000 or more persons in their central cities. Johnson County, where the University of Iowa College of Dentistry is located, has the largest number of dentists of any nonmetropolitan county. Other counties in this group with substantial numbers of dentists are Des Moines, Cerro Gordo, Clinton, Story, and Webster. The 28 counties with central cities of 5,000-9,999 inhabitants have among them 240 dentists, almost one-fifth of the State supply. Another one-fifth of Iowa's dentists are located in the 50 counties with less than 5,000 persons in their central cities.

AGE OF DENTISTS AND DIFFERENCES IN AGE BY AREA

With slightly more than one-half of the dentists in Iowa over 50 years of age, the median age of Iowa dentists reporting in the survey was 50.2 years. About one-sixth of the State's dentists are under 35, yet more than two-fifths are 55 years of age or older. Almost one in every four, or 298 dentists, are 65 years of age or older and 166 dentists have reached the age of 70.

Age Distribution

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	1,340[1]	100	-
Under 30	46	4	4
30 - 34	151	12	16
35 - 39	146	11	27
40 - 44	170	13	40
45 - 49	126	10	50
50 - 54	100	8	58
55 - 59	106	8	66
60 - 64	141	11	77
65 - 69	132	10	87
70 - 74	81	6	93
75 and over	85	7	100

[1] Age not available for 56 dentists. Percents based on total for whom age was reported.

The median age of dentists in metropolitan areas is 48.4 years, about three years younger than the median of 51.3 years for dentists in the nonmetropolitan counties. Among the metropolitan areas, Des Moines has the youngest dentists, with a median age of 44.7 years. One-third of the dentists in this area are under 40 years of age, and only one-fifth are 65 or over. In contrast, dentists in the Sioux City area are the oldest as a group, with a median age of 56.9. Less than one-fifth of these dentists are under 40, while fully one-third have reached the age of 65.

Median dentist ages in nonmetropolitan counties tend to increase as the size of the central city decreases. The median age of dentists in the counties with central cities of at least 10,000 population is 48.0 years, compared to a median age of 55.6 years in counties with less than 5,000 persons in their central cities. Considering the nonmetropolitan counties individually, Johnson County is notable because of its young dentists; their median age is 42.5 years, almost nine years below the median age for all nonmetropolitan counties combined.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,340 responding dentists in Iowa, 1,257, or 94 percent, are active in their profession, giving Iowa one professionally active dentist for every 2,242 persons. In the seven metropolitan areas combined there is one professionally active dentist for every 2,000 persons, a ratio somewhat better than the 2,396 persons per dentist in the nonmetropolitan counties.

Number of Persons Per Active Dentist

County group	Professionally active dentists	Population	Persons per dentist
All counties	1,257	2,818,300	2,242
All metropolitan areas	489	977,900	2,000
Dubuque area	51	84,000	1,647
Des Moines area	153	286,300	1,871
Cedar Rapids area	78	148,500	1,904
Sioux City area	56	110,200	1,968
Waterloo area	60	131,100	2,185
Davenport area	57	128,900	2,261
Council Bluffs area	34	88,900	2,615
Nonmetropolitan county groups	768	1,840,400	2,396
Central city 10,000-49,999	295	562,200	1,906
Central city 5,000-9,999	226	559,900	2,477
Central city 2,500-4,999	169	474,400	2,807
Central city under 2,500	78	243,900	3,127

Among the metropolitan areas, Dubuque has the best ratio, with one dentist for every 1,647 persons. The persons-per-dentist ratios for the Des Moines, Cedar Rapids and Sioux City areas, all under 2,000, are only slightly less favorable. The ratios for the Waterloo and Davenport areas are very close to the average for the State, while the Council Bluffs area has 2,615 persons per dentist, the least favorable ratio among the metropolitan areas.

Among the 91 nonmetropolitan counties of the State, there are 18 counties with persons-per-dentist ratios under 2,000, yet 36 counties have ratios exceeding 3,000 persons for every dentist. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 10,000 or more population have an average of 1,906 persons per dentist, a ratio more favorable than in four of the seven metropolitan areas. In contrast, the counties with central cities of less than 2,500 inhabitants average 3,127 persons for every active dentist.

UTILIZATION OF AUXILIARIES

Almost three out of every four dental practitioners in Iowa (i.e., dentists who spend any time working at the chair) reported they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 69 percent of all practitioners, including 61 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 24 percent of the dentists, with over half of these dentists utilizing such personnel full time. Only 10 percent of the dentists employ dental hygienists and four percent employ dental technicians. About half of the dentists who employ hygienists or technicians do so only part time.

Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners: Total	With one full-time employee (or more)	With only part-time personnel
Total	1,245	100	67	7
With one or more auxiliaries	927	74	67	7
With assistant	854	69	61	8
With hygienist	119	10	5	5
With technician	44	4	2	2
With secretary or receptionist	293	24	14	10
With other type of personnel	45	4	1	3
With no auxiliary	318	26	-	-

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Eighty-nine percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 76 percent among dentists 45 to 64 years old and to 49 percent among dentists 65 and over. Dentists in the early years of their practice generally do not reach peak utilization of assistants until they are 30 years of age and of hygienists until age 40.

OTHER SURVEY FINDINGS

***Ninety-five percent of the professionally active dentists in Iowa are primarily engaged in private practice. Another three percent are on the staff of the dental school and the remaining two percent are either employed by State or local government agencies or are engaged in other dental activities, such as taking advanced training.

***Dentists providing patient care in the year prior to the survey devoted an average of 41.3 hours per week to this activity for 47.3 weeks during the year. About one dentist in eight worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

***About 12 percent of the responding practitioners reported they limited their practice to a dental specialty, primarily to orthodontics, followed by oral surgery and pedodontics. Eighteen percent of the dentists in metropolitan areas limit their practice, compared to 9 percent in the nonmetropolitan areas.

***Thirty percent of the 553 civilian dentists licensed in Iowa but located in another State are in one of the six adjacent States, primarily Nebraska and Illinois. Another 28 percent of the out-of-State dentists are located in California or Colorado, and the remainder are scattered in 34 other States and the District of Columbia.

***About one out of every five out-of-State dentists reported that they had been professionally active in Iowa immediately prior to assuming their present location in another State. More than one-third of the 124 out-migrant dentists are now located in California or Arizona, and the remaining two-thirds are in 26 other States, primarily those States adjacent to Iowa.

November 1967.

APPENDIX TABLE

Selected Data on Dentists in Iowa, by Location

County group and county	Civilian dentists				Population[1/] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or over			
All counties	1,340	343	545	1,257	2,818.3	2,242
Metropolitan areas[2/]	521	137	200	489	977.9	2,000
Des Moines area	163	52	56	153	286.3	1,871
Polk	163	52	56	153	286.3	1,871
Cedar Rapids area	82	22	29	78	148.5	1,904
Linn	82	22	29	78	148.5	1,904
Davenport area[3/]	66	15	27	57	128.9	2,261
Scott	66	15	27	57	128.9	2,261
Waterloo area	63	15	25	60	131.1	2,185
Black Hawk	63	15	25	60	131.1	2,185
Sioux City area[4/]	57	10	29	56	110.2	1,968
Woodbury	57	10	29	56	110.2	1,968
Council Bluffs area[5/]	35	8	13	34	88.9	2,615
Pottawattamie	35	8	13	34	88.9	2,615
Dubuque area	55	15	21	51	84.0	1,647
Dubuque	55	15	21	51	84.0	1,647
Nonmetropolitan counties[6/]	819	206	345	768	1,840.4	2,396
Central city 25,000-49,999	209	70	65	194	306.1	1,578
Cerro Gordo	30	9	9	30	51.0	1,700
Clinton	28	7	9	26	57.6	2,215
Des Moines	34	11	11	32	45.4	1,419
Johnson	77	32	24	67	56.7	846
Wapello	16	6	5	16	46.4	2,900
Webster	24	5	7	23	49.0	2,130

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Iowa, by Location

County group and county	Civilian dentists				Population[1/] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or over			
Nonmetropolitan counties[6/] (cont'd.)						
Central city 10,000-24,999	105	21	48	101	256.1	2,536
Boone	9	1	3	9	27.8	3,089
Jasper	13	2	8	13	36.3	2,792
Lee	15	3	5	15	44.4	2,960
Mahaska	11	3	6	11	23.0	2,091
Marshall	18	6	8	16	38.2	2,388
Muscatine	14	1	7	14	34.3	2,450
Story	25	5	11	23	52.1	2,265
Central city 5,000-9,999	240	58	104	226	559.9	2,477
Appanoose	4	-	1	4	15.2	3,800
Bremer	8	4	4	8	21.6	2,700
Buchanan	8	1	3	7	22.4	3,200
Buena Vista	13	4	6	12	21.1	1,758
Carroll	9	2	4	8	23.8	2,975
Cass	5	1	2	5	17.8	3,560
Cherokee	12	3	5	10	18.7	1,870
Clay	12	4	3	12	18.6	1,550
Dallas	9	1	4	8	23.9	2,988
Emmet	6	2	3	6	15.0	2,500
Fayette	10	1	6	10	28.6	2,860
Floyd	13	4	5	12	21.0	1,750
Hamilton	6	2	3	5	20.2	4,040
Hardin	12	5	4	12	22.8	1,900
Henry	9	1	2	9	17.9	1,989
Jackson	5	2	1	5	21.4	4,280
Jefferson	5	2	2	5	15.5	3,100
Kossuth	9	1	7	8	25.3	3,163
Lucas	4	-	3	3	10.3	3,433
Marion	15	1	8	14	26.0	1,857
Montgomery	8	1	2	8	13.8	1,725

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Iowa, by Location

County group and county	Civilian dentists				Population[1/] (in 000's)	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Under 40	55 years or over			
Nonmetropolitan counties[6/] (cont'd.)						
Central city 5,000-9,999 (cont'd.)						
Page	12	2	5	11	20.1	1,827
Plymouth	13	3	6	12	24.2	2,017
Poweshiek	6	2	3	6	19.1	3,183
Union	7	1	4	6	13.2	2,200
Warren	5	3	1	5	21.9	4,380
Washington	6	2	3	6	19.0	3,167
Winneshiek	9	3	4	9	21.5	2,389
Central city 2,500-4,999	179	41	90	169	474.4	2,807
Allamakee	8	-	5	7	16.0	2,286
Audubon	3	1	-	3	10.6	3,533
Benton	5	1	2	5	23.5	4,700
Cedar	6	1	2	6	18.0	3,000
Chickasaw	5	1	2	5	14.9	2,980
Clarke	2	-	1	2	7.7	3,850
Crawford	5	3	1	5	18.4	3,680
Davis	3	-	1	3	8.8	2,933
Delaware	3	1	2	3	18.8	6,267
Dickinson	8	2	4	7	12.4	1,771
Franklin	4	-	4	3	15.1	5,033
Greene	3	1	-	3	14.1	4,700
Harrison	8	1	6	6	17.1	2,850
Howard	5	2	2	5	12.6	2,520
Humboldt	6	2	2	6	13.1	2,183
Jones	7	1	2	7	20.8	2,971
Lyon	5	-	3	5	14.4	2,880
Madison	4	1	2	4	11.9	2,975
Mills	7	2	3	4	12.6	3,150
Mitchell	9	-	6	9	14.1	1,567
Monona	6	1	4	6	13.4	2,233
Monroe	3	1	2	3	9.8	3,267

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Iowa, by Location

County group and county	Civilian dentists				Population[1/] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or over			
Nonmetropolitan counties[6/] (cont'd.)						
Central city 2,500-4,999 (cont'd.)						
O'Brien	9	4	3	9	18.8	2,089
Osceola	3	1	2	3	10.0	3,333
Palo Alto	3	-	2	3	14.6	4,867
Sac	8	1	5	8	16.9	2,113
Shelby	3	2	-	3	16.0	5,333
Sioux	12	4	7	12	26.6	2,217
Tama	9	3	6	8	21.1	2,638
Winnebago	7	3	3	7	12.8	1,829
Wright	10	1	6	9	19.5	2,167
Central city under 2,500	86	16	38	78	243.9	3,127
Adair	3	-	1	2	10.2	5,100
Adams	-	-	-	-	7.0	-
Butler	3	1	1	3	17.3	5,767
Calhoun	7	-	3	7	15.9	2,271
Clayton	9	-	2	9	21.7	2,411
Decatur	4	2	2	4	9.8	2,450
Fremont	2	-	-	2	9.8	4,900
Grundy	5	3	-	5	14.2	2,840
Guthrie	6	1	4	4	13.2	3,300
Hancock	5	1	2	5	14.5	2,900
Ida	4	-	2	4	9.9	2,475
Iowa	11	3	8	10	16.6	1,660
Keokuk	5	1	4	4	15.0	3,750
Louisa	2	-	1	2	10.1	5,050
Pocahontas	6	1	2	6	13.9	2,317
Ringgold	3	-	2	2	7.3	3,650
Taylor	2	1	1	2	9.5	4,750

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Iowa, by Location

County group and county	Civilian dentists				Population[1] (in 000's)	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Under 40	55 years or over			
Nonmetropolitan counties[6] (cont'd.)						
Central city under 2,500 (cont'd.)						
Van Buren	3	-	1	2	9.3	4,650
Wayne	3	1	1	2	9.0	4,500
Worth	3	1	1	3	9.7	3,233

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[2] Iowa counties included in the latest 1967 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists reporting their location in the Iowa portion of the SMSA.

[3] Iowa part of the Davenport-Rock Island-Moline SMSA.

[4] Iowa part of the Sioux City SMSA.

[5] Iowa part of the Omaha SMSA.

[6] Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN KANSAS

During the 1965 registration period, 1,827 dentists registered with the Kansas Board of Dental Examiners. Fifty-five percent of these dentists were civilians located in Kansas, another 40 percent were civilian dentists located in other States, and five percent were on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Kansas

Location and military status	All dentists	Percent of dentists
Total licensed	1,827	100
Respondents	1,455	80
Nonrespondents	372	20
Total licensed	1,827	100
Civilians in Kansas	1,003	55
Respondents	884	-
Nonrespondents	119	-
Civilians in another State	738	40
On active duty with Armed Forces	86	5

The survey questionnaire was completed by a total of 1,455 dentists, for an overall response rate of 80 percent. However, the response rate of dentists actually located in Kansas was somewhat higher, 88 percent, since nonresponse was more common among dentists located outside the State or on active duty with the Armed Forces.

The data provided by the survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained from records maintained by the Kansas Board of Dental Examiners and from the 1966 American Dental Directory published by the American Dental Association.

PROFESSIONAL TRAINING

More than four-fifths (82 percent) of Kansas' 1,003 dentists graduated from the University of Missouri at Kansas City. Another 10 percent are graduates of six other dental schools located in adjacent States, including 3 percent each from The Creighton University and St. Louis University, and 2 percent from the University of Nebraska. Three other schools in adjacent States (two of them now extinct) have together provided 23 dentists, 2 percent of the State supply. The remaining 8 percent of Kansas' dentists obtained their dental degrees from 23 other schools located in more distant States.

Dental School Attended and Year of Graduation for Dentists in Kansas

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	1,003[1/]	-	279	314	399
		(Percent distribution by school)			
Schools in adjacent States	919	92	92	93	92
Missouri (Kansas City)	817	82	85	82	80
Creighton University	33	3	3	4	3
St. Louis University	29	3	*	3	5
University of Nebraska	17	2	2	1	2
3 other schools	23	2	2	3	2
23 schools in other States	75	8	8	7	8

1/ Dental school attended not available for 9 dentists and year of graduation for 11 dentists. Percents based on known totals.

* Less than one-half of one percent.

Only about one-fourth (28 percent) of the State's dentists have graduated from dental school since 1955, as compared to a full two-fifths (40 percent) who received their dental degree prior to World War II. There has been virtually no change over the years in the overall proportion of dentists graduating from the schools in adjacent States.

Approximately 13 percent of the survey respondents, 112 dentists, reported that they had completed one or more years of advanced training after receiving the dental degree. Of 83 dentists with advanced academic training, 56 received a master's or other advanced degree, while another 27 received no additional degree but reported the completion of one or more years of advanced work at the postgraduate level. Of the 62 dentists with advanced clinical training, 35 had completed an internship, and 27, a residency. There are 33 dentists who had taken both academic and clinical training.

DISTRIBUTION OF DENTISTS

Slightly more than two-fifths of the 1,003 dentists in Kansas are located in the three metropolitan areas of the State. Two metropolitan areas--the Kansas portion of the interstate Kansas City area and the Wichita area--each have about one-sixth (17 percent) of the State's dentists. The remaining metropolitan area, Topeka, contains 8 percent of the State supply.

Distribution of Kansas Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	105	1,003	100
Metropolitan areas	5	422	42
Kansas City area (Kansas part)	2	174	17
Wichita area	2	171	17
Topeka area	1	77	8
Nonmetropolitan counties	100	581	58
Central city 10,000-49,999	20	288	29
Central city 2,500-9,999	34	193	19
Central city under 2,500	46	100	10

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

Almost three-fifths of the State's dentists (581) are located in the 100 nonmetropolitan counties. One-half of these dentists are located in the 20 counties with 10,000 or more persons in their central cities. Three of these counties--Douglas, Reno, and Saline--have between 20 and 30 dentists each, and another 12 have at least 10 dentists each.

The remaining one-half of the State's nonmetropolitan dentists are scattered among the 80 counties with central cities of less than 10,000 persons. The 34 counties with central city populations between 2,500 and 9,999 have 193 dentists, almost one-fifth of the total supply. The remaining 46 counties, with less than 2,500 persons in their central cities, have among them 100 dentists, about one-tenth of all dentists in the State. While only 17 of these 80 counties have more than five dentists, 49 have no more than three dentists, including 13 with one dentist, and six counties with no dentist, according to available information.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of the 1,003 responding dentists in Kansas is 45.3 years. Although about one-third (318) of the dentists are under 40 years of age, a sizeable proportion, some two-fifths, are 55 years or over. Almost one in every four, or 230 dentists, are 65 years old or more, including 161 who have reached the age of 70.

Median Age and Age Distribution of Kansas Dentists,
by County Group

County group	Median age	Percent of dentists Under 40	Percent of dentists 40-54	Percent of dentists 55 and over
All counties	45.3	32	30	38
Metropolitan areas	42.8	37	37	26
Kansas City area (Kansas part)	40.7	47	33	20
Wichita area	43.6	32	41	27
Topeka area	46.0	26	37	37
Nonmetropolitan counties	51.2	28	25	47
Central city 10,000-49,999	46.7	32	29	39
Central city 2,500-9,999	57.8	24	21	55
Central city under 2,500	54.2	27	23	50

The median age of dentists in metropolitan areas is 42.8 years, more than eight years below the median of 51.2 years for dentists in nonmetropolitan counties. The youngest group of dentists is found in the Kansas City area, where the median age is 40.7 years. Almost half (47 percent) of the dentists in this area are under 40 years of age, while one in every five is 55 or over. The Topeka area has the oldest group of dentists, with a median age of 46.0 years. About one-fourth of these dentists are under 40, while almost two-fifths are 55 or older.

Among nonmetropolitan counties, older dentists tend to be concentrated in those counties with less than 10,000 persons in their central cities. The median age of dentists in counties with central cities of 10,000 or more is 46.7 years, almost 10 years less than the median of 56.5 for dentists in counties with smaller central cities.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,003 licensed dentists in Kansas, 937, or 93 percent, are active in their profession, giving the State one professionally active dentist for every 2,421 persons. There is one dentist for every 2,290 persons in the metropolitan areas, while the remainder of the State has a slightly less favorable ratio of one dentist for every 2,519 persons.

Number of Persons Per Active Dentist in Kansas

County group*	Professionally active dentists	Population	Persons per dentist
All counties	937	2,268,700	2,421
Metropolitan areas	399	913,600	2,290
Kansas City area (Kansas part)	166	378,700	2,281
Wichita area	160	383,400	2,396
Topeka area	73	151,500	2,075
Nonmetropolitan counties	538	1,355,100	2,519
Central city 10,000-49,999	272	663,400	2,439
Central city 2,500-9,999	173	412,100	2,382
Central city under 2,500	93	279,600	3,006

* See Appendix Table for individual county data.

Among the metropolitan areas, the Topeka area has the best ratio, with one dentist for every 2,075 persons. The Kansas City and Wichita metropolitan areas have slightly less favorable ratios of 2,281 and 2,396 persons per dentist, respectively.

Among the 100 nonmetropolitan counties of the State, 14 have persons-per-dentist ratios under 2,000, yet there are 37 counties with ratios of more than 3,000, including 21 with ratios in excess of 4,000 persons per dentist. The least favorable ratio of persons per dentist is found in those counties with less than 2,500 persons in their central cities. The groups of counties with central cities of 2,500 or more inhabitants average about 2,400 persons per dentist, while counties with central cities of less than 2,500 have a ratio of about 3,000.

UTILIZATION OF AUXILIARIES

Four of every five dental practitioners in Kansas (i.e., dentists who spend any time working at the chair) reported the employment of one or more auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 76 percent of the practitioners, including 70 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by approximately 30 percent of the dentists, with about two-thirds of these dentists utilizing such personnel full time. Only 15 percent of the dentists employ dental hygienists, and 7 percent employ dental technicians.

Kansas Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	856 1/	100	76	4
One or more auxiliaries	677	80	76	4
Assistant	638	76	70	6
Hygienist	125	15	8	7
Laboratory technician	63	7	3	4
Secretary or receptionist	247	29	21	8
Other type of personnel	24	3	1	2
No auxiliary	165	20	-	-

1/ Includes 14 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is less frequent among older dentists. Ninety-one percent of dental practitioners under the age of 55 reported employment of some type of auxiliary. The proportion utilizing auxiliaries decreases to 76 percent among dentists 55 to 64 years of age and to 48 percent among dentists 65 and over.

Some 14 percent of the responding dentists in Kansas reported one or more vacancies for auxiliary personnel. Of those reporting vacancies, slightly more than one-third indicated a need for full-time dental assistants, and almost one-third reported vacancies for full-time dental hygienists. Nine of every 10 dentists reporting a vacancy already employ one or more auxiliaries.

OTHER SURVEY FINDINGS

- Multiple licensure is fairly common in Kansas, with one-half of the respondents located in the State holding more than one license. Forty-three percent indicated licensure in at least one additional State and 7 percent in two or more other States. The proportion of out-of-State dentists holding multiple licenses is considerably greater; 35 percent hold two or more licenses in addition to their Kansas license. About 70 percent of the licenses held outside the State were issued by adjacent States, including 45 percent in Missouri, 12 percent in Oklahoma, 10 percent in Colorado, and 2 percent in Nebraska.

- Ninety-seven percent of the responding professionally active dentists located in Kansas are primarily engaged in private practice, with 96 percent self-employed and 1 percent employed by other dentists. The remaining three percent are either employed by governmental agencies or are engaged in other dental activity, such as taking advanced training.

- Dentists reporting on time spent in providing patient care devoted an average of 40.5 hours per week to this activity for 47.5 weeks during the year preceding the survey. About one in every six dentists worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

- About 8 percent of the responding practitioners reported that they limit their practice to a dental specialty, primarily orthodontics or oral surgery. Almost 12 percent of the dentists in metropolitan areas limit their practices, compared to only 5 percent of the dentists in nonmetropolitan counties.

- About seven of every ten responding dentists who are licensed in Kansas but located elsewhere are in adjacent States, mostly in Missouri, Oklahoma, and Colorado. Another 7 percent are located in California, while the remainder are scattered throughout 30 other States, the District of Columbia, and foreign countries.

APPENDIX TABLE

Selected Data on Dentists in Kansas, By Location

Area and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 40	55 or more			
All counties	1,003	884	119	318	375	937	2,268.7	2,421
Metropolitan areas 2/	422	363	59	155	108	399	913.6	2,290
Wichita area	171	149	22	55	45	160	383.4	2,396
Sedgwick	157	135	22	53	42	146	345.3	2,365
Butler	14	14	-	2	3	14	38.1	2,721
Kansas City area (Kansas part)	174	148	26	80	35	166	378.7	2,281
Johnson	96	81	15	50	14	91	178.9	1,966
Wyandotte	78	67	11	30	21	75	199.8	2,664
Topeka area	77	66	11	20	28	73	151.5	2,075
Shawnee	77	66	11	20	28	73	151.5	2,075
Nonmetropolitan counties 3/	581	521	60	163	267	538	1,355.1	2,519
Central city 25,000-49,999	78	74	4	29	22	74	165.5	2,236
Douglas	23	22	1	7	7	20	46.8	2,340
Reno	29	27	2	11	8	28	61.9	2,211
Saline	26	25	1	11	7	26	56.8	2,185

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kansas, By Location

Area and county	Civilian dentists: Total	Respondents	Nonrespondents	Age in 1965: Under 40	Age in 1965: 55 or more	Professionally active	Population[1] (in 000's)	Persons per active dentist
Nonmetropolitan counties[3] (cont'd.)								
Central city 10,000-24,999	210	186	24	62	91	198	497.9	2,515
Atchison	7	7	-	3	3	6	20.4	3,400
Barton	18	18	-	6	9	18	35.0	1,944
Cowley	17	15	2	2	9	16	38.0	2,375
Crawford	16	12	4	4	9	13	37.3	2,869
Ellis	11	8	3	3	5	9	22.4	2,489
Finney	8	7	1	2	2	8	17.6	2,200
Ford	7	7	-	2	2	7	21.8	3,114
Franklin	10	9	1	4	5	10	20.7	2,070
Geary	10	8	2	3	5	9	30.4	3,378
Harvey	14	12	2	2	7	13	26.3	2,023
Labette	12	10	2	2	6	12	26.4	2,200
Leavenworth	18	16	2	8	3	18	49.0	2,722
Lyon	14	12	2	4	7	13	26.6	2,046
Montgomery	19	16	3	5	10	18	44.7	2,483
Neosho	7	7	-	2	2	6	19.3	3,217
Riley	14	14	-	6	4	14	43.8	3,129
Seward	8	8	-	4	3	8	18.2	2,275
Central city 5,000-9,999	84	71	13	17	46	75	155.1	2,068
Allen	7	6	1	-	5	7	17.2	2,457
Bourbon	6	6	-	1	3	5	16.2	3,240
Cloud	8	6	2	2	5	7	14.4	2,057
Di[illegible]nson	12	11	1	4	8	11	23.0	2,091
McPherson	16	14	2	3	9	15	24.4	1,627

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kansas, By Location

Area and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 40	55 or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city 5,000-9,999 (cont'd.)								
Pawnee	5	5	-	1	4	5	10.5	2,100
Pratt	12	8	4	1	5	8	12.1	1,512
Russell	6	3	3	-	2	5	11.8	2,360
Sumner	12	12	-	5	5	12	25.5	2,125
Central city 2,500-4,999	109	100	9	28	59	98	257.0	2,622
Anderson	2	2	-	-	1	2	8.9	4,450
Barber	4	1	3	1	3	2	8.4	4,200
Brown	9	9	-	2	7	8	14.6	1,825
Cherokee	6	6	-	3	1	6	22.3	3,717
Clay	7	6	1	2	4	5	10.7	2,140
Grant	2	1	1	1	1	1	5.7	5,700
Greenwood	4	4	-	1	3	4	10.8	2,700
Harper	4	4	-	1	1	4	9.4	2,350
Jackson	2	2	-	-	2	2	10.1	5,050
Kingman	4	4	-	1	3	4	10.6	2,650
Marshall	9	9	-	5	2	9	15.5	1,722
Miami	9	9	-	3	4	8	20.2	2,525
Mitchell	6	6	-	-	5	6	8.8	1,467
Morris	2	2	-	1	1	2	7.2	3,600
Norton	5	3	2	1	2	4	8.6	2,150
Phillips	5	5	-	1	3	5	9.6	1,920
Republic	4	4	-	1	3	4	9.4	2,350
Rice	4	3	1	1	1	4	13.5	3,375

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kansas, By Location

Area and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965		Professionally active		
				Under 40	55 or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city 2,500-4,999 (cont'd.)								
Rooks	2	2	-	1	1	2	9.3	4,650
Scott	2	2	-	-	-	2	5.6	2,800
Sherman	3	3	-	-	2	3	6.7	2,233
Stevens	2	2	-	-	1	2	4.4	2,200
Thomas	4	4	-	1	2	3	7.3	2,433
Trego	2	2	-	1	1	2	5.3	2,650
Wilson	6	5	1	-	5	4	14.1	3,525
Central city under 2,500	100	90	10	27	49	93	279.6	3,006
Chase	2	1	1	-	2	1	3.7	3,700
Chautaugua	3	2	1	-	2	2	5.6	2,800
Cheyenne	1	1	-	-	1	1	4.7	4,700
Clark	2	1	1	1	1	2	3.5	1,750
Coffey	2	2	-	-	1	2	8.1	4,050
Comanche	1	1	-	-	1	1	3.0	3,000
Decatur	2	1	1	-	2	2	6.0	3,000
Doniphan	1	1	-	-	1	1	10.1	10,100
Edwards	2	2	-	1	1	2	5.1	2,550
Elk	2	2	-	-	1	2	4.7	2,350
Ellsworth	5	5	-	2	3	5	8.2	1,640
Gove	1	1	-	-	-	1	4.3	4,300
Graham	2	2	-	1	1	2	5.5	2,750
Gray	1	1	-	-	-	1	4.5	4,500
Greeley	2	1	1	1	1	1	2.1	2,100

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kansas, By Location

Area and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 40	55 or more			
Nonmetropolitan counties[3/] (cont'd.)								
Central city under 2,500 (cont'd.)								
Hamilton	2	2	-	1	1	2	3.2	1,600
Haskell	-	-	-	-	-	-	3.5	-
Hodgeman	1	-	1	-	-	-	3.1	-
Jefferson	3	3	-	1	2	3	11.3	3,767
Jewell	3	3	-	1	2	3	7.0	2,333
Kearny	-	-	-	-	-	-	3.1	-
Kiowa	2	2	-	2	-	2	4.7	2,350
Lane	1	1	-	1	-	1	3.2	3,200
Lincoln	2	2	-	-	1	2	5.9	2,950
Linn	-	-	-	-	-	-	8.1	-
Logan	2	2	-	2	-	2	4.4	2,200
Marion	8	8	-	2	4	8	15.0	1,875
Meade	1	1	-	-	-	1	5.7	5,700
Morton	3	3	-	1	1	3	3.9	1,300
Nemaha	6	4	2	3	2	5	13.1	2,620
Ness	1	-	1	-	-	1	5.8	5,800
Osage	5	5	-	1	2	4	13.3	3,325
Osborne	3	3	-	-	2	2	7.2	3,600
Ottawa	5	5	-	2	1	5	7.0	1,400
Pottawatomie	3	3	-	1	1	3	12.0	4,000
Rawlins	1	1	-	-	1	1	5.1	5,100
Rush	4	4	-	-	3	4	5.9	1,475
Sheridan	2	2	-	1	1	2	4.3	2,150
Smith	3	2	1	1	2	3	7.9	2,633

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kansas, By Location

Area and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 40	55 or more			
Nonmetropolitan counties[3/] (cont'd.)								
Central city under 2,500 (cont'd.)								
Stafford	3	3	-	-	2	3	7.3	2,433
Stanton	-	-	-	-	-	-	2.2	-
Wabaunsee	1	1	-	-	1	1	6.5	6,500
Wallace	-	-	-	-	-	-	2.2	-
Washington	4	4	-	1	1	4	10.8	2,700
Wichita	-	-	-	-	-	-	2.8	-
Woodson	2	2	-	-	1	2	5.0	2,500

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[2/] Kansas counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For the interstate Kansas City SMSA, statistics are presented only for dentists located in the Kansas portion.

[3/] Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN KENTUCKY

During the 1965 registration period, 1,494 dentists registered with the Kentucky State Board of Dental Examiners. A total of 1,366 dentists responded to the survey, 91 percent of all those registered. Three-fourths of the responding dentists are civilians located in Kentucky, 19 percent are civilians located in other states, and 6 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Kentucky

Location and military status	All dentists	Percent of dentists
Total	1,494	100
Respondents	1,366	91
Nonrespondents	128	9
Respondents	1,366	100
Civilians in Kentucky	1,024	75
Civilians in another state	254	19
On active duty with Armed Forces	87	6
Not reported	1	*

* Less than one-half of one percent.

Approximately one-third of the survey respondents hold a license to practice dentistry in one or more other states. About one-fifth of the dentists located in Kentucky hold more than one license, with 15 percent licensed in one other state and 4 percent licensed in two or more other states. Multiple licensure is much more common among out-of-state dentists; 21 percent hold two or more licenses in addition to their Kentucky license.

More than half of the licenses held outside of Kentucky are held in one of the seven adjacent states, primarily Indiana, Ohio, Tennessee and West Virginia. Of more distant states, the most frequently reported were Florida and New York.

PROFESSIONAL TRAINING

The dental school at the University of Louisville has through the years supplied the vast majority of Kentucky's dentists, having trained more than four-fifths of the 1,024 responding dentists located in the State. Furthermore, the relative contribution of this school has increased in recent years, accounting for 9 out of every ten dentists in the State who graduated after 1955, compared to 78 percent of those graduating prior to World War II. The new College of Dentistry at the University of Kentucky, which opened in 1962, had not graduated its first class at the time of the survey.

Dental School Attended and Year of Graduation
for Dentists in Kentucky

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	1,024	-	290	409	325
		(Percent distribution by school)			
University of Louisville	839	82	89	81	78
Schools in adjacent states	135	13	6	13	20
The Ohio State University	24	2	1	1	5
St. Louis University	22	2	1	2	4
12 other schools	89	9	4	10	11
24 more distant schools	50	5	5	6	2

Fourteen schools in adjacent states have provided another 13 percent of Kentucky's dentists, even though the relative contribution of these schools has declined substantially through the years. While none of these schools has supplied a large number of dentists, Ohio State and St. Louis Universities have together trained 4 percent of the total dental force.

Some 16 percent of the survey respondents, 167 dentists, reported that they have completed one year or more of advanced training since receiving their dental degree. Of the 116 dentists who reported advanced academic training, 58 earned a master's or other advanced degree and an equal number received no additional degree but completed one or more years of postgraduate study. Among the 105 dentists with advanced clinical training, 43 completed a residency and 62, an internship. There are 43 dentists who completed both clinical and academic training.

DISTRIBUTION OF DENTISTS

More than one-half (54 percent) of the licensed dentists in Kentucky are located in the five metropolitan areas of the State. Approximately one-third of the total supply is concentrated in Jefferson County, which constitutes the Kentucky portion of the interstate metropolitan area of Louisville. The Lexington area has the second largest dental force, 11 percent of the State's supply. Another 7 percent of the dentists are located in the Kentucky portion of the interstate Cincinnati area, which contains the city of Covington. The Kentucky parts of two other interstate areas, Huntington-Ashland and Evansville, have 3 percent and 1 percent of the dentist supply, respectively.

Distribution of Kentucky Dentists, by County Group

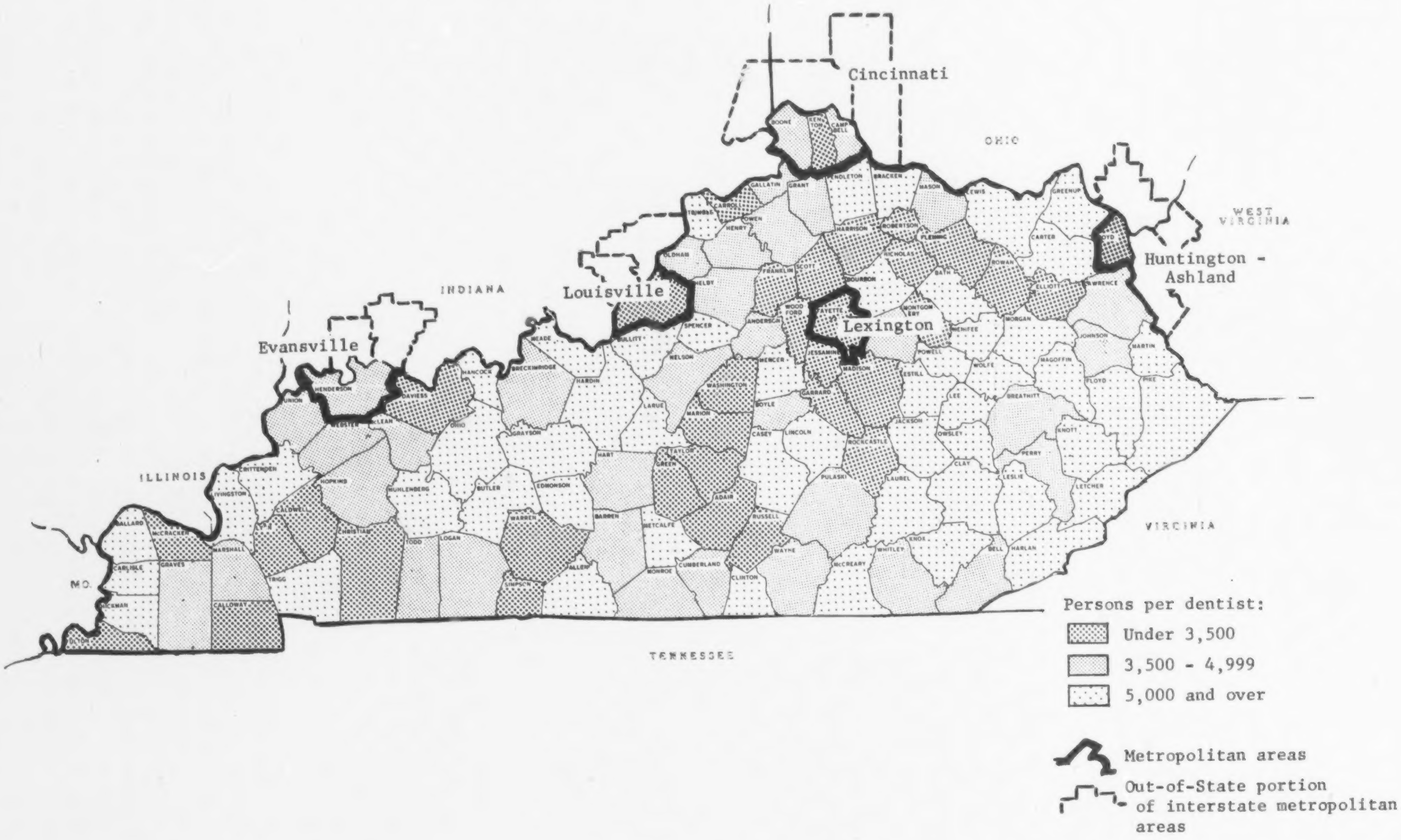
County group*	Number of counties	Number of dentists	Percent of dentists
All counties	120	1,024	100
Metropolitan areas	7	548	54
Louisville area (Ky. part)	1	326	32
Lexington area	1	108	11
3 other areas	5	114	11
Nonmetropolitan counties	113	476	46
Central city 10,000-49,999	11	166	17
Central city 2,500- 9,999	43	200	19
Central city under 2,500	59	110	10

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

More than 45 percent of Kentucky's dentists are located in the 113 nonmetropolitan counties of the State. The 11 counties with central cities of 10,000 or more persons have 166 dentists, 17 percent of the State's dental force. Four of these counties--Daviess, McCracken, Christian and Warren--have 20 or more dentists.

The 102 counties with less than 10,000 persons in their central cities have almost 30 percent of the State's dentist supply. None of these counties, however, have large numbers of dentists. There are 200 dentists distributed throughout the 43 counties having between 2,500 and 9,999 persons in their central cities, and 110 dentists scattered among the 59 counties with central cities of less than 2,500 population. Only 22 of these 102 counties have as many as 5 dentists, while 64 have no more than 3 dentists, including 21 with only one dentist, and 7 counties that have no dentists, according to available information.

NUMBER OF PERSONS PER DENTIST IN KENTUCKY, BY COUNTY


Cincinnati
OHIO
WEST VIRGINIA
Huntington - Ashland
INDIANA
Louisville
Lexington
Evansville
ILLINOIS
MO.
VIRGINIA
TENNESSEE
Persons per dentist:
▨ Under 3,500
▨ 3,500 - 4,999
▨ 5,000 and over
Metropolitan areas
Out-of-State portion of interstate metropolitan areas

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,024 responding dentists in Kentucky, 990, or 97 percent, are active in their profession, giving Kentucky one professionally active dentist for every 3,141 persons. In the metropolitan areas--which have 54 percent of the State's active dentists and only 37 percent of its population--the ratio is one dentist for every 2,150 persons. The remainder of the State--with 46 percent of the active dentists and 63 percent of the population--has a considerably less favorable ratio of one dentist for every 4,288 persons.

Number of Persons per Active Dentist in Kentucky

County group*	Professionally active dentists	Population	Persons per dentist
Total	990	3,109,800	3,141
Metropolitan areas	531	1,141,500	2,150
Louisville area (Ky. part)	316	665,700	2,107
Lexington area	107	146,100	1,365
3 other areas	108	329,700	3,053
Nonmetropolitan counties	459	1,968,300	4,288
Central city 10,000-49,999	159	470,100	2,957
Central city 2,500-9,999	193	907,400	4,702
Central city under 2,500	107	590,800	5,521

* See Appendix Table for data pertaining to individual metropolitan areas and counties.

Among the metropolitan areas, Lexington, where the University of Kentucky College of Dentistry is located, has the best ratio with 1,365 persons per active dentist. Jefferson County, the hub of the interstate Louisville area, has a somewhat less favorable ratio of 2,107 persons for every dentist. Of the remaining three areas, each of which constitutes the Kentucky portion of a larger interstate metropolitan area, Huntington-Ashland (Boyd County) has the best ratio, one dentist for 1,597 persons, while Cincinnati (Boone, Campbell and Kenton Counties) and Evansville (Henderson County) have far less favorable ratios of 3,624 and 4,275, respectively.

Among the nonmetropolitan counties, there are 16 with persons-per-dentist ratios under 3,000, yet 64 counties have ratios exceeding 4,000 persons-per-dentist, including 27 counties with ratios over 6,000. Generally, the ratio of persons per dentist becomes much less favorable as the size of the central city decreases. The group of counties with central cities of 10,000 or more inhabitants have an average persons-per-dentist ratio of approximately 3,000, while counties with central cities of less than 2,500 average over 5,500 persons per dentist.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of dentists in Kentucky is 44.7 years. Almost one-fifth of the responding dentists are under 35, and another third are between 35 and 44 years of age. On the other hand, a substantial proportion, more than one-fourth are 55 or over. About 11 percent of the dentists (119) are at least 65 years of age, including 72 who have reached the age of 70.

Age Distribution of Kentucky Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	1,024 1/	100	-
Under 30	62	6	6
30-34	130	13	19
35-39	152	15	34
40-44	177	17	51
45-49	141	14	65
50-54	91	9	74
55-59	77	8	82
60-64	74	7	89
65-69	47	4	93
70-74	29	3	96
75 and over	43	4	100

1/ One dentist did not report age.

The median age of dentists in metropolitan areas is 44.4 years, only slightly below the median of 45.1 years in nonmetropolitan counties. Among individual metropolitan areas, however, age differences are rather pronounced. The median age of dentists in the Louisville area is 45.0 years, about the same as the median for the State as a whole. Only 17 percent of these dentists are under 35, while 28 percent have reached the age of 55. On the other hand, dentists in the Lexington area average about 5 years younger, with a median age of 40.0 years. More than one-fourth of the dentists in this area are under 35 years of age, and only 20 percent are 55 or older.

UTILIZATION OF AUXILIARIES

More than four-fifths of the dental practitioners in Kentucky (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 74 percent of all practitioners, including 67 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 26 percent of all practitioners, with about two-thirds of these dentists utilizing such personnel full time. Eleven percent of the practitioners employ dental hygienists and 7 percent employ laboratory technicians. Slightly more than one-half of the dentists who employ hygienists or technicians do so only part time.

Some 16 percent of the responding dental practitioners in Kentucky reported one or more vacant positions for auxiliary personnel. Vacancies for dental hygienists were the most frequently reported.

Kentucky Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of Dental Practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	954 1/	100	74	8
One or more auxiliaries	762	82	74	8
Assistant	687	74	67	7
Hygienist	106	11	5	6
Laboratory technician	64	7	3	4
Secretary or receptionist	246	26	17	9
Other type of personnel	33	4	1	3
No auxiliary	170	18	-	-

1/ Includes 22 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is less common among the older dentists. Eighty-eight percent of dental practitioners under the age of 55 reported employment of some type of auxiliary. The proportion utilizing auxiliaries decreases to 72 percent among dentists 55 to 64 years of age and to 48 percent among dentists 65 and over.

Although dentists in metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan counties, the use of hygienists is much more common in metropolitan areas than in the remainder of the State. About 15 percent of the dentists in metropolitan areas report the employment of hygienists, compared to only 7 percent of those in nonmetropolitan counties.

OTHER SURVEY FINDINGS

☐ Ninety-two percent of the professionally active dentists in Kentucky are primarily engaged in private practice, with 91 percent self-employed and one percent employed by another dentist. Five percent are on the staff of a dental school, another two percent are employed by governmental agencies, and the remaining one percent are engaged in other dental activities, such as taking advanced training.

☐ At least one part-time dental activity in addition to their principal employment was reported by 13 percent of the dentists. Employment in State or local health departments was the most frequently reported secondary activity. Teaching at a dental school was the next most frequently reported part-time employment.

☐ Dentists reporting time spent in providing patient care devoted an average of 39.7 hours per week to this activity for 47.9 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ About 11 percent of the practitioners reported they limit their practices to a dental specialty, primarily orthodontics or oral surgery. The metropolitan areas have a large share--about four-fifths--of the dentists who limit their practices. While one in every 6 dentists practicing in a metropolitan area limits his practice, in nonmetropolitan counties only one in every 25 dentists does so.

☐ Of the 254 responding dentists licensed in Kentucky but located out of the State, approximately one-half are in adjacent states, primarily Indiana and Ohio. Another one-fourth of the out-of-state dentists are located in Florida, California or New York, and the remainder are scattered among 25 other states and the District of Columbia.

May 1968.

APPENDIX TABLE

Selected Data on Dentists in Kentucky, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Under 35	55 years or more			
All counties	1,024	192	270	990	3,109.8	3,141
Metropolitan areas 2/	548	102	149	531	1,141.5	2,150
Louisville area (Ky. part)	326	56	92	316	665.7	2,107
Jefferson	326	56	92	316	665.7	2,107
Cincinnati area (Ky. part)	73	12	23	67	242.8	3,624
Boone	7	2	1	6	25.2	4,200
Campbell	21	1	8	19	91.1	4,795
Kenton	45	9	14	42	126.5	3,012
Lexington area	108	28	21	107	146.1	1,365
Fayette	108	28	21	107	146.1	1,365
Huntington-Ashland area (Ky. part)	33	5	10	33	52.7	1,597
Boyd	33	5	10	33	52.7	1,597
Evansville area (Ky. part)	8	1	3	8	34.2	4,275
Henderson	8	1	3	8	34.2	4,275
Nonmetropolitan counties 3/	476	90	121	459	1,968.3	4,288
Central city 25,000-49,999	77	14	19	73	183.7	2,516
Daviess	30	3	5	29	75.0	2,586
McCracken	26	5	9	23	60.4	2,626
Warren	21	6	5	21	48.3	2,300

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

County group and county	Civilian dentists				Population [1] (in 000's)	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Under 35	55 years or more			
Nonmetropolitan counties [3] (cont'd.)						
Central city 10,000-24,999	89	15	18	86	286.4	3,330
Barren	7	-	3	6	28.4	4,733
Bell	9	1	2	8	32.0	4,000
Christian	22	5	3	22	65.9	2,995
Clark	6	-	1	6	22.1	3,683
Franklin	14	3	3	14	33.3	2,379
Graves	8	3	2	8	29.6	3,700
Hopkins	10	1	1	10	39.0	3,900
Madison	13	2	3	12	36.1	3,008
Central city 5,000-9,999	91	17	23	89	365.7	4,109
Bourbon	4	-	1	3	18.3	6,100
Boyle	7	-	4	6	21.4	3,567
Caldwell	4	1	-	4	13.0	3,250
Calloway	8	2	-	8	22.0	2,750
Hardin	8	1	4	8	74.9	9,363
Harrison	4	1	2	4	13.7	3,425
Logan	5	1	-	5	20.6	4,120
Mason	5	-	1	5	18.5	3,700
Mercer	3	1	-	3	15.0	5,000
Montgomery	4	1	1	4	13.6	3,400
Perry	7	-	1	7	31.2	4,457
Pulaski	8	-	2	8	33.3	4,163
Scott	5	2	1	5	16.1	3,220
Simpson	5	1	2	5	12.3	2,460
Taylor	7	3	3	7	17.1	2,443
Whitley	7	3	1	7	24.7	3,529

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

County group and county	Civilian dentists			Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965				
		Under 35	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city 2,500-4,999	109	17	32	104	541.7	5,209
Allen	3	-	1	2	11.6	5,800
Anderson	2	1	1	2	8.4	4,200
Carroll	3	1	1	3	7.8	2,600
Estill	2	-	-	2	11.9	5,950
Floyd	5	-	2	4	38.1	9,525
Fulton	4	-	2	4	10.1	2,525
Garrard	3	-	2	3	9.7	3,233
Grayson	1	-	-	1	15.2	15,200
Greenup	6	-	2	5	30.1	6,020
Harlan	7	1	5	6	43.0	7,167
Jessamine	4	1	2	4	13.7	3,425
Johnson	5	1	1	5	17.9	3,580
Knox	3	1	1	3	24.4	8,133
Laurel	5	1	1	5	25.6	5,120
Letcher	3	-	-	3	27.1	9,033
Marion	6	1	2	5	17.3	3,460
Marshall	5	-	-	5	18.3	3,660
Muhlenberg	5	1	1	5	26.1	5,220
Nelson	6	3	-	6	22.7	3,783
Pendleton	2	-	1	2	10.0	5,000
Pike	6	-	1	6	64.6	10,767
Rowan	4	-	1	4	13.3	3,325
Shelby	5	2	-	5	20.0	4,000
Union	4	2	1	4	14.4	3,600
Wayne	3	-	1	3	14.6	4,867
Webster	3	-	2	3	13.6	4,533
Woodford	4	1	1	4	12.2	3,050

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city under 2,500	110	27	29	107	590.8	5,521
Adair	4	1	1	4	13.7	3,425
Ballard	-	-	-	-	8.1	-
Bath	1	-	-	1	8.7	8,700
Bracken	-	-	-	-	6.9	-
Breathitt	3	1	-	3	13.8	4,600
Breckinridge	3	-	1	3	14.6	4,867
Bullitt	3	1	-	3	17.9	5,967
Butler	1	1	-	1	8.9	8,900
Carlisle	1	-	1	1	5.3	5,300
Carter	4	1	2	4	21.0	5,250
Casey	2	1	-	2	13.6	6,800
Clay	3	1	1	3	20.8	6,933
Clinton	1	-	-	1	8.8	8,800
Crittenden	1	-	-	1	7.8	7,800
Cumberland	2	-	-	2	7.2	3,600
Edmonson	1	1	-	1	7.5	7,500
Elliott	2	-	1	2	6.7	3,350
Fleming	3	-	1	3	10.3	3,433
Gallatin	1	-	1	1	3.5	3,500
Grant	2	1	1	2	9.3	4,650
Green	4	-	-	4	11.3	2,825
Hancock	1	1	-	1	5.5	5,500
Hart	3	1	1	3	13.3	4,433
Henry	4	1	3	3	11.0	3,667
Hickman	1	-	-	1	6.3	6,300
Jackson	1	-	1	-	9.7	-

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city under 2,500 (cont'd.)						
Knott	2	2	-	2	16.3	8,150
Larue	2	-	-	2	10.6	5,300
Lawrence	3	-	-	3	11.7	3,900
Lee	1	-	-	1	7.4	7,400
Leslie	1	1	-	1	9.8	9,800
Lewis	2	-	1	2	12.9	6,450
Lincoln	2	-	1	2	15.7	7,850
Livingston	-	-	-	-	7.5	-
Lyon	2	-	2	2	5.7	2,850
McCreary	3	1	-	2	11.6	5,800
McLean	2	1	1	2	9.1	4,550
Magoffin	1	-	1	1	10.0	10,000
Martin	1	-	-	1	9.6	9,600
Meade	1	-	-	1	21.6	21,600
Menifee	-	-	-	-	4.1	-
Metcalfe	1	-	-	1	7.7	7,700
Monroe	3	-	-	3	10.9	3,633
Morgan	2	-	1	2	10.1	5,050
Nicholas	2	2	-	2	6.2	3,100
Ohio	3	1	1	3	16.4	5,467
Oldham	3	2	1	3	14.0	4,667
Owen	2	1	-	2	7.8	3,900
Owsley	-	-	-	-	4.6	-
Powell	-	-	-	-	6.7	-
Robertson	1	-	-	1	2.3	2,300
Rockcastle	4	1	1	4	11.8	2,950
Russell	4	1	-	4	9.9	2,475

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Kentucky, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city under 2,500 (cont'd.)						
Spencer	1	1	-	1	5.5	5,500
Todd	3	-	1	3	11.1	3,700
Trigg	1	-	-	1	8.7	8,700
Trimble	-	-	-	-	5.1	-
Washington	4	1	2	4	10.9	2,725
Wolfe	1	-	1	1	6.0	6,000

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2/ Kentucky counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For interstate SMSA's--Louisville, Cincinnati, Huntington-Ashland, and Evansville--statistics are presented only for dentists located in the Kentucky portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN LOUISIANA

During the 1965 registration period, 1,726 dentists registered with the Louisiana State Board of Dentistry. Over three-fourths of the registered dentists were civilians located in Louisiana, another 18 percent were civilians located in other States, and 6 percent were on active duty in the Armed Forces.

Location and Military Status of Dentists
Licensed in Louisiana

Location and military status	All dentists	Percent of dentists
Total licensed	1,726	100
Respondents	1,287	75
Nonrespondents	439	25
Total licensed	1,726	100
Civilians in Louisiana	1,309	76
Respondents	970	-
Nonrespondents	339	-
Civilians in another State	307	18
On active duty with Armed Forces	108	6
Not reported	2	*

* Less than one-half of one percent.

The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Louisiana State Board of Dentistry or from the 1966 American Dental Directory published by the American Dental Association.

PROFESSIONAL TRAINING

Almost four-fifths of Louisiana's dentists graduated from dental schools located in Louisiana, including over 70 percent who received their dental degrees from Loyola University. Loyola has consistently graduated the largest number of dentists in Louisiana with the proportion increasing from 54 percent of the dentists who graduated before World War II to 80 percent of those who graduated within the last 10 years. Fourteen other dental schools in the South have trained an additional 16 percent of Louisiana's dentists. Principal contributors among these schools have been Emory and Baylor Universities, Meharry Medical College and the University of Tennessee.

School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	1,309[1/]	-	388	422	447
		(Percent distribution by school)			
Schools in the South	1,201	94	93	93	94
Loyola (New Orleans)	911	71	80	81	54
Tulane (extinct)	94	7	-	-	21
Emory	52	4	2	1	8
Meharry	32	3	1	4	2
Baylor	28	2	3	3	1
Tennessee	23	2	4	1	*
10 other schools	61	5	3	3	8
26 schools in other regions	86	6	7	7	6

[1/] Dental school attended not available for 22 dentists and year of graduation for 52 dentists. Percents based on totals for whom the data are known.

* Less than one-half of one percent.

About eighteen percent of the survey respondents, or 171 dentists, reported they had completed one year or more of advanced training beyond receipt of the dental degree. One hundred and ten dentists have received advanced clinical training as interns or residents and 91 have completed at least one year of advanced academic work as graduate or postgraduate students. These figures include 30 dentists who completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Almost 70 percent of the licensed dentists in Louisiana are located in the six metropolitan areas of the State. The New Orleans area alone has 500 dentists, about 38 percent of all the dentists in the State. The Shreveport metropolitan area is the location of another 150 dentists, 12 percent of the State's supply. The four remaining metropolitan areas, Baton Rouge, Lake Charles, Monroe and Lafayette, have among them 19 percent of Louisiana's dentists.

Distribution by Parish Group

Parish group	Number of parishes	Number of dentists	Percent of dentists
All parishes	64	1,309	100
All metropolitan areas	10	903	69
New Orleans	4	501	38
Shreveport	2	151	12
Baton Rouge	1	121	9
Lake Charles	1	58	4
Monroe	1	40	3
Lafayette	1	32	3
Nonmetropolitan parishes	54	406	31
Central city 10,000-49,999	15	242	18
Central city 5,000-9,999	14	76	6
Central city 2,500-4,999	14	62	5
Central city under 2,500	11	26	2

Less than one-third of the State's dentists are located in the 54 nonmetropolitan parishes. These dentists tend to be concentrated in the parishes which contain a relatively large city. Three-fifths of the dentists in nonmetropolitan parishes are located in the 15 parishes with a central city of 10,000 or more population. The 39 parishes which do not have a city this large account for only 13 percent of the dentists in the State. (See Appendix Table for presentation of individual parish data.)

AGE OF DENTISTS

With slightly more than one-half of the dentists under 45 years of age, the median age of dentists in Louisiana is 44.4 years. One-fourth of the State's dentists are under 35 and more than one-fourth are 55 years of age or older. About one in every eight, or 152 dentists, are 65 years old or over, and 88 have reached the age of 70.

Age Distribution

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	1,309[1]	100	-
Under 30	126	10	10
30 - 34	194	15	25
35 - 39	155	12	37
40 - 44	172	14	51
45 - 49	159	13	64
50 - 54	110	9	73
55 - 59	107	9	82
60 - 64	81	6	88
65 - 69	64	5	93
70 - 74	45	4	97
75 & over	43	3	100

1/ Age not available for 53 dentists. Percents based on total for whom age is known.

There are marked differences in the median ages of dentists in the metropolitan areas and in the nonmetropolitan parish groups. The median age of dentists in both the New Orleans and Shreveport metropolitan areas is about 45 years, compared to slightly over 40 years for dentists in the Lake Charles and Lafayette areas. Among the nonmetropolitan parishes, those with central cities of less than 2,500 inhabitants have the oldest group of dentists, with a median age of approximately 52 years--almost eight years higher than the median age of all dentists in the State.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,309 dentists in Louisiana, 1,249, or 95 percent, are active in their profession, giving Louisiana one professionally active dentist for every 2,815 persons. The six metropolitan areas have proportionately more of the State's dentists than of its population--69 percent of the active dentists compared with only 55 percent of the population. As a result of this uneven distribution of dentists in relation to population, there is one dentist for every 2,234 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of one dentist for every 4,149 persons.

Number of Persons Per Active Dentist

Parish group	Professionally active dentists	Population	Persons per dentist
All parishes	1,249	3,515,800	2,815
All metropolitan areas	870	1,943,500	2,234
New Orleans	480	997,400	2,078
Shreveport	142	306,500	2,158
Baton Rouge	119	261,900	2,201
Lake Charles	58	169,200	2,917
Monroe	39	115,000	2,949
Lafayette	32	93,500	2,922
Nonmetropolitan parishes	379	1,572,300	4,149
Central city 10,000-49,999	228	822,000	3,605
Central city 5,000-9,999	71	337,400	4,752
Central city 2,500-4,999	56	272,600	4,868
Central city under 2,500	24	140,300	5,846

Among the metropolitan areas, New Orleans has the best ratio, with one dentist for every 2,078 persons. The persons-per-dentist ratios for Shreveport and Baton Rouge, both approximately 2,200, are only slightly less favorable. The remaining three metropolitan areas, Lake Charles, Monroe and Lafayette, have ratios of about 2,900 persons per dentist, a little above the State average.

In the nonmetropolitan parishes of the State, the ratio of persons per dentist generally becomes less favorable as the size of the central city declines. The group of parishes with central cities of 10,000 or more population have an average persons-per-dentist ratio of 3,605, the most favorable ratio among the parish groups, but still considerably exceeding the ratio for the State as a whole. In contrast, the parishes with central cities of less than 2,500 inhabitants average 5,846 persons for every active dentist.

UTILIZATION OF AUXILIARIES

Almost eight of every 10 dental practitioners in Louisiana (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 71 percent of all practitioners, including 65 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 29 percent of the dentists with about two-thirds of these dentists utilizing such personnel full time. Only 12 percent of the dentists employ dental hygienists and 7 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners: Total	With one full-time employee (or more)	With only part-time personnel
Total respondents	929[1/]	100	72	7
With one or more auxiliaries	733	79	72	7
With assistant	654	71	65	6
With hygienist	108	12	5	7
With technician	67	7	2	5
With secretary or receptionist	271	29	19	10
With other type of personnel	35	4	2	2
With no auxiliary	191	21	-	-

1/ Includes 5 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Ninety percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 76 percent among dentists 45 to 64 years old and drops to 44 percent among dentists 65 and over.

Although dentists in the metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan parishes, the use of hygienists is much more common in the metropolitan areas than in the remainder of the State. About 15 percent of the dentists in the metropolitan areas report the employment of a hygienist, compared to only 5 percent of the dentists located elsewhere.

HIGHLIGHTS OF OTHER SURVEY FINDINGS

***Ninety-six percent of the 1,249 professionally active dentists in Louisiana are primarily engaged in private practice. Another two percent are on the staff of the dental school, and the remaining two percent are either employed by State or local government agencies or are engaged in other dental activities, such as taking advanced training.

***Dentists providing patient care devoted an average of 40.5 hours per week to this activity for 48.5 weeks during the year preceding the survey. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

***About 12 percent of the practitioners reported they limit their practices to a dental specialty, primarily to orthodontics or oral surgery. Nine-tenths of the dentists who reported limiting their practices are located in the State's metropolitan areas. The New Orleans area alone has over three times as many dentists with limited practices as all 54 nonmetropolitan parishes combined.

***Six percent of the respondents, 59 dentists, practices as a civilian dentist in one of 22 other States or the District of Columbia immediately prior to assuming their present Louisiana location. Three in every 10 of these dentists came from the adjacent States of Texas, Mississippi, and Arkansas.

***Almost one-half of the 307 civilian dentists licensed in Louisiana but located in another State were in the nearby States of Texas, Mississippi, or Florida. The remaining out-of-State dentists were scattered among 33 other States, the District of Columbia or foreign countries.

September 1967.

APPENDIX TABLE

Selected Data on Dentists in Louisiana, By Location

Parish group and parish	Civilian dentists							
	Total	Respondents	Non-respondents	Age in 1965		Professionally active	Population[1] (in 000's)	Persons per active dentist
				Under 35	55 years or more			
All parishes	1,309	970	339	320	340	1,249	3,515.8	2,815
All metropolitan areas[2]	903	665	238	224	227	870	1,943.5	2,234
New Orleans area	501	355	146	120	132	480	997.4	2,078
Jefferson	82	63	19	34	8	81	250.6	3,094
Orleans	399	275	124	77	123	380	663.5	1,746
St. Bernard	3	3	-	1	-	3	39.1	13,033
St. Tammany	17	14	3	8	1	16	44.2	2,762
Shreveport area	151	108	43	34	47	142	306.5	2,158
Bossier	7	4	3	-	1	7	64.3	9,186
Caddo	144	104	40	34	46	135	242.2	1,794
Baton Rouge area	121	92	29	35	25	119	261.9	2,201
East Baton Rouge	121	92	29	35	25	119	261.9	2,201
Lake Charles area	58	48	10	20	7	58	169.2	2,917
Calcasieu	58	48	10	20	7	58	169.2	2,917
Monroe area	40	33	7	7	13	39	115.0	2,949
Ouachita	40	33	7	7	13	39	115.0	2,949
Lafayette area	32	29	3	8	3	32	93.5	2,922
Lafayette	32	29	3	8	3	32	93.5	2,922
All nonmetropolitan parishes[3]	406	305	101	96	113	379	1,572.3	4,149
Central city 25,000-49,999	66	48	18	16	17	62	179.1	2,889
Iberia	19	15	4	6	5	18	56.9	3,161
Rapides	47	33	14	10	12	44	122.2	2,777

Selected Data on Dentists in Louisiana, By Location (cont'd.)

Parish group and parish	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
All nonmetropolitan parishes (cont'd.)								
Central city 10,000-24,999	176	138	38	42	43	166	642.9	3,873
Acadia	14	11	3	3	3	14	51.3	3,664
Jefferson Davis	10	8	2	3	3	9	31.4	3,489
Lafourche	21	18	3	7	3	21	62.1	2,957
Lincoln	7	6	1	1	2	5	30.0	6,000
Morehouse	6	5	1	1	3	6	34.4	5,733
Natchitoches	6	4	2	1	2	6	34.8	5,800
St. Landry	22	16	6	7	7	22	83.8	3,809
St. Mary	15	11	4	5	4	13	55.5	4,269
Tangipahoa	17	14	3	2	4	16	62.7	3,919
Terrebonne	19	16	3	6	4	19	68.9	3,626
Vermilion	12	8	4	3	2	10	39.9	3,990
Washington	13	10	3	1	4	12	46.9	3,908
Webster	14	11	3	2	2	13	41.2	3,169
Central city 5,000-9,999	76	53	23	18	27	71	337.4	4,752
Allen	8	5	3	2	3	8	20.3	2,538
Ascension	8	4	4	4	2	7	30.6	4,371
Avoyelles	11	7	4	2	7	10	37.4	3,740
Beauregard	5	3	2	2	1	5	19.7	3,940
De Soto	4	3	1	-	1	3	24.1	8,033
East Carroll	4	4	-	-	2	4	13.5	3,375
Evangeline	7	3	4	1	1	6	31.7	5,283
Iberville	9	7	2	2	1	9	31.4	3,489
Livingston	5	5	-	3	1	5	30.2	6,040
Madison	2	1	1	1	1	2	15.8	7,900
St. John the Baptist	-	-	-	-	-	-	20.2	-
St. Martin	7	5	2	1	4	6	30.3	5,050
West Baton Rouge	1	1	-	-	1	1	16.3	16,300
Winn	5	5	-	-	2	5	15.9	3,180
Central city 2,500-4,999	62	46	16	18	16	56	272.6	4,868
Bienville	5	3	2	1	2	4	15.7	3,925
Cameron	-	-	-	-	-	-	7.2	-
Claiborne	8	5	3	2	4	6	17.0	2,833

Selected Data on Dentists in Louisiana, By Location (cont'd.)

Parish group and parish	Civilian dentists					Profes-sionally active	Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965				
				Under 35	55 years or more			
All *nonmetropolitan* parishes (cont'd.)								
Central city 2,500-4,999 (cont'd.)								
Concordia	6	5	1	4	-	6	23.3	2,883
Franklin	4	2	2	1	-	4	24.6	6,150
Jackson	3	1	2	-	1	2	16.0	8,000
Plaquemines	3	3	-	1	-	3	26.4	8,800
Pointe Coupee	4	4	-	1	1	3	22.8	7,600
Richland	6	5	1	-	3	6	22.6	3,767
Sabine	3	2	1	1	1	3	17.4	5,800
St. Charles	8	7	1	3	1	8	24.9	3,112
St. James	4	4	-	2	2	4	19.8	4,950
Union	4	3	1	1	-	4	17.0	4,250
Vernon	4	2	2	1	1	3	17.9	5,967
Central city under 2,500	26	20	6	2	10	24	140.3	5,846
Assumption	7	4	3	-	4	7	18.3	2,614
Caldwell	2	2	-	-	-	2	8.4	4,200
Catahoula	3	2	1	1	2	2	11.2	5,600
East Feliciana	2	1	1	-	1	1	20.7	20,700
Grant	2	1	1	-	1	2	12.9	6,450
La Salle	6	6	-	-	2	6	13.1	2,183
Red River	1	1	-	-	-	1	8.9	8,900
St. Helena	-	-	-	-	-	-	9.2	-
Tensas	-	-	-	-	-	-	11.2	-
West Carroll	1	1	-	-	-	1	13.0	13,000
West Feliciana	2	2	-	1	-	2	13.4	6,700

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[2] Louisiana parishes included in the latest 1966 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data.

[3] Parishes not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each parish.

DENTISTS LICENSED IN MAINE

A total of 435 dentists registered with the Board of Dental Examiners of the State of Maine during the 1965 registration period (Table 1). The survey questionnaire was completed by 405 dentists, or 93 percent of all those registering. A large proportion of the responding dentists--89 percent--are civilians located in Maine. Civilian dentists located in other States account for another 9 percent of the respondents. Nearly one-half of these out-of-State dentists reside in Massachusetts, slightly more than one-fifth are located in New Hampshire or New York, and the remainder are scattered among 8 other States.

Table 1.--Location and Military Status of Dentists Licensed in Maine

Location and military status	All dentists	Percent of dentists
Total licensed	435	100
Respondents	405	93
Nonrespondents	30	7
Respondents	405	100
Civilians in Maine	360	89
Civilians in another State	36	9
On active duty with Armed Forces	9	2

Civilian Dentists in Maine

Sources of Supply

Dental schools.--More than one-half of Maine's dentists are graduates of the two New England Schools of Dental Medicine at Tufts University and Harvard University (Table 2). Through the years Tufts University has been the primary source of Maine's dentist supply and its contribution has increased slightly since 1955 as compared with the years prior to World War II. Harvard's relative contribution to the Maine supply, on the other hand, has declined greatly during the post-war years.

Graduates of 10 other eastern dental schools in Pennsylvania, Maryland, New York, the District of Columbia and New Jersey account for another 30 percent of the dentists in Maine. The University of Maryland has been the primary contributor among these ten schools to the Maine supply. However, proportionately fewer of Maine's dentists who have graduated from dental school in recent years attended Maryland than did those graduating in 1940 or earlier.

Table 2.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	360[1]	360	80	140	133
		(Percent distribution by school)			
Tufts	164	46	48	50	41
Harvard	41	11	3	8	19
Maryland	32	9	4	6	15
Pennsylvania	22	6	7	5	7
Georgetown	14	4	5	6	2
Temple	14	4	6	1	6
Montreal	12	3	4	4	3
20 other schools	61	17	24	21	7

[1] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown they are based on data supplied by dentists responding to the item (see Appendix Table A).

Another 4 percent of the State's dentists are graduates of 3 Canadian dental schools, primarily the Universite de Montreal. The remainder of Maine's dentists--about a twelfth of the total--received their dental education in 12 schools located in 8 other States.

Dentists relocating in Maine.--One in every eight dentists now located in Maine reported previous professional locations as civilians in other States. Almost one-half of the 42 dentists relocating in Maine moved from Massachusetts or New York. The remainder came from 16 other States and the District of Columbia.

Personal Characteristics

Age.--The median age in 1965 of Maine's reporting dentists was a relatively high 47.1 years. More than one-half of the State's dentists are between the ages of 35 and 54, including 3 in every 10 who are in the 35 to 44 age group (Table 3). Dentists who are 55 or over number twice as many as those who are under 35 years of age. Included in this older age group are 67 reporting dentists who are 65 or older.

Table 3.--Age Distribution in 1965

Age	Number of dentists	Percent of dentists
Total	360	100
Under 30	12	3
30 - 34	42	12
35 - 39	39	11
40 - 44	69	19
45 - 49	41	11
50 - 54	43	12
55 - 59	22	6
60 - 64	24	7
65 - 69	25	7
70 - 74	29	8
75 & over	13	4

Advanced training.--One or more years of advanced training has been completed by at least 62 dentists in Maine (Table 4). Twelve percent have received advanced clinical training as interns and residents, and 7 percent have completed at least one year of advanced academic work as graduate or postgraduate students.

Table 4.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
With advanced training	62	17
Clinical training only	36	10
Academic training only	19	5
Both clinical and academic	7	2
Clinical training		
Residency completed	14	4
Internship completed	29	8
Academic training		
M.A., M.S., or other advanced degree	8	2
Postgraduate 1 year or more (no degree)	18	5

There is a growing tendency for younger dentists to seek additional training beyond the dental degree, particularly advanced academic work. About 13 percent of the dentists under 40 years of age have had a year or more of graduate or postgraduate study as compared with only 7 percent of those 40 to 54 years old and 4 percent of those 55 and over.

Multiple licensure.--About one-third of the dentists located in Maine are also licensed to practice dentistry in other States. However, only 16 of the State's 121 dentists who reported multiple licensure are registered to practice in more than one other State in addition to Maine. Two-thirds of all dentists holding out-of-State licenses are licensed to practice in Massachusetts. Maine dentists are also registered in 18 other States, primarily New York and New Hampshire.

Distribution and Current Status

Distribution of dentists.--Slightly more than three-fourths of the 360 reporting dentists are located in only 6 of the State's 16 counties (Table 5). Cumberland County, a portion of which makes up the Portland metropolitan area, has the largest number of dentists, almost 30 percent of the State's supply. Three other counties--Kennebec, Androscoggin and York--in the southern coastal area of the State also contain sizeable numbers of dentists, each about 10 percent of the total in the State. The State's other metropolitan area, the Lewiston-Auburn area, makes up a part of Androscoggin County. Penobscot County in the Maine Woods area has the second largest number of dentists of any county. Aroostook County, the northernmost county in the State, is the only other county with at least 20 dentists. Of the other 10 counties, Oxford and Somerset Counties in the Maine Woods area and Hancock and Knox Counties on the northeast coast have 10 or more dentists (see Appendix Table B for individual county data).

Table 5.--Distribution by County

County	Number of dentists	Percent of dentists
All counties	360	100
Cumberland	103	29
Penobscot	41	11
Kennebec	38	11
Androscoggin	36	10
York	33	9
Aroostook	21	6
10 other counties	88	24

Active dentists in relation to population.--Of the 360 respondents in Maine, 356 reported that they were active in the dental profession. The other four dentists, who are all 65 years old or over, regarded themselves as fully retired. Based on this count, there was one professionally active dentist for every 2,790 persons in Maine in 1965.

Cumberland County has the most favorable county ratio, only 1,844 persons per active dentist (Table 6). Kennebec County and Androscoggin County have the next most favorable ratios--2,403 and 2,442 persons per dentist, respectively. The other 3 most populous counties--Aroostook, Penobscot and York Counties--each have persons-per-active-dentist ratios less favorable than the State, which averages 2,790 persons per dentist.

Table 6.--Number of Persons Per Dentist

County	Professionally active dentists	Population	Persons per dentist
All counties	356	993,200	2,790
Cumberland	103	189,900	1,844
Penobscot	40	134,100	3,353
Kennebec	38	91,300	2,403
Androscoggin	36	87,900	2,442
York	33	102,700	3,112
Aroostook	20	108,700	5,435
10 other counties	86	278,600	3,240

The other 10 counties in Maine each have smaller populations and fewer dentists. The extremes in persons-per-dentist ratios in these counties occur in two adjoining counties on the northeast coast. Knox County has the most favorable ratio with 2,618 persons per dentist and Waldo County has the least favorable ratio of 5,750 (see Appendix Table C for individual county data). In addition to Knox County, another northeast coast county, Hancock, as well as Piscataquis County in the Maine Woods area also have fewer persons per dentist than the State on the average. Each of the other 6 counties in Maine have fewer than 4,000 persons per active dentist.

Professional Activity

Current employment.--Nearly all the professionally active dentists in Maine are primarily engaged in private practice: 97 percent are self-employed and one percent are employed by another dentist. The other 2 percent are employed by governmental agencies, or are engaged in other dental employment. One in every ten dentists who are professionally active also report that they are engaged in a part-time dental activity in addition to their primary professional employment.

Activity last year.--All dentists, except two, who reported on their professional activity last year, stated that they provided care for patients. Dentists reporting time spent in patient care devoted an average of 46.8 weeks during the year to this activity and worked an average of 39.8 hours per week.

A few dentists reported more than one type of professional activity. About 5 percent of the active dentists reported they were engaged in teaching or research, or they were taking advanced training. However, less than one percent of the total professional time was spent in all activities other than patient care.

Of the dentists who provided patient care last year, the largest proportion, 57 percent, spent 40 hours or more per week at this activity for at least 48 weeks of the year (Table 7). Dentists who spent the least amount of time in patient care, less than 48 weeks a year and less than 40 hours per week, accounted for only 14 percent of all dentists engaged in this activity.

Table 7.--Time Spent in Patient Care Last Year

Weeks spent in patient care	Percent of dentists providing patient care	Percent distribution by work week			
		48 hours or more	41-47 hours	40 hours	Under 40 hours
Total	100	18	19	31	32
50 weeks or more	41	9	9	13	10
48 - 49 weeks	34	6	7	13	8
Less than 48 weeks	25	3	3	5	14

The amount of time worked by dentists in private practice last year declined sharply with increasing age. Slightly less than 8 in 10 dentists under 35 years of age report working at least 48 weeks and at least 40 hours per week. The proportion working this amount of time declines to 6 in 10 dentists for those between 45 and 54 years old and then decreases sharply to less than 3 in 10 dentists among those 65 years old or over.

Practice Characteristics

Limited practices.--A total of 28 dentists, or one in every 12 dentists in Maine, report limiting their practice to a dental specialty. Practices limited to orthodontia or oral surgery are reported by almost all of these dentists. Two-thirds of the dentists in limited practice are located in either Cumberland or Penobscot Counties.

Use of auxiliaries.--Dental auxiliaries are employed by more than four-fifths of the dental practitioners, including approximately 75 percent who employ at least one auxiliary full time (Table 8). Almost three-fourths of the practitioners employ dental assistants, mostly on a full-time basis. Dental hygienists are employed by 17 percent of the practitioners, including 8 percent who employ one full time. About one in 11 practitioners employ laboratory technicians in their practices, and slightly more than half of these dentists employ full-time technicians.

Table 8.--Dental Practitioners Employing One or More Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time personnel
Total	354	100	75	7
With one or more auxiliaries	283[1]	82	75	7
With assistant	253	73	65	8
With hygienist	60	17	8	9
With laboratory technician	32	9	5	4
With secretary or receptionist	69	20	16	4
With other type of personnel	10	3	2	1
With no auxiliary	64	18	-	-

[1] Individual items add to more than the total because some dentists employ more than one type of auxiliary.

Young dentists are considerably more likely to employ auxiliary personnel than are their older colleagues. Over 90 percent of the dental practitioners under 40 years of age employ one or more auxiliaries. But among dentists 55 years or older, the proportion using auxiliaries drops to approximately 62 percent.

A large proportion of the dentists in each of the 16 counties utilize auxiliary personnel in their practices. In 11 of the counties four-fifths or more of the practitioners employ auxiliaries. In the 6 counties which have the largest numbers of dentists the proportion of practitioners with auxiliary personnel ranges from a low 77 percent in Penobscot and Androscoggin Counties to a high 85 percent in Cumberland County.

December 1966.

Appendix Table A.--Summary Statistics for Maine

	Number of dentists
All licensed dentists	435
Respondents -- total dentists participating in survey	405
Civilian dentists in Maine[1] -- civilian respondents designated simply as "dentists" in text tables	360
(number not reporting: age - 1, year of graduation - 7)	
Professionally active dentists[2]	356
Dental practitioners[3]	354
In limited practice[4]	28
Located in Maine last year:	
Reported professional activity[5]	332
Dentists providing patient care[6]	330
Reported time spent in patient care[7]	281
Dentists in private practice[8]	329
Reported time spent in practice[9]	280
Out-of-State dentists -- civilian respondents not located in Maine	36
Dentists on active duty with Armed Forces	9
Nonrespondents -- licensed dentists not participating in survey	30

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[1] All responding dentists who currently work in Maine (excluding those in the Armed Forces) or who are retired and currently live in the State.

[2] All active civilian dentists currently in Maine--excludes four dentists who are fully retired.

[3] All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

[4] Dentists who reported they limited their practice to a dental specialty.

[5] Dentists located in Maine last year who indicated type(s) of activity in which they engaged.

[6] All dentists who engaged in patient care last year, either as a primary or a secondary activity.

[7] Dentists reporting both hours and weeks spent in patient care last year.

[8] Dentists who reported they were primarily self-employed both currently and last year.

[9] Dentists reporting both hours and weeks spent last year as a self-employed dentist.

Appendix Table B.--Maine Counties, by Geographical Area[1]

County	Central city[2]	Number of responding civilian dentists
Southern Coastal area		
Cumberland	Portland	103
Kennebec	Augusta	38
Androscoggin	Lewiston	36
York	Biddeford	33
Sagadahoc	Bath	7
Maine Woods area		
Penobscot	Bangor	41
Oxford	Rumford	15
Somerset	Skowhegan	10
Franklin	Farmington	8
Piscataquis	Dover-Foxcroft	6
Northeast Coast area		
Hancock	Ellsworth	12
Knox	Rockland	11
Washington	Calais	8
Lincoln	Boothbay Harbor	6
Waldo	Belfast	5
Aroostook area		
Aroostook	Presque Isle	21

[1] The geographical areas in Maine have been adapted from the State Economic Areas designated in the publication: Donald J. Bogue and Calvin L. Beale, "Economic Areas of the United States." New York, The Free Press of Glencoe, Inc., 1961.

[2] The largest (central) city in each county according to the 1960 population.

Appendix Table C.--County Data

Counties with responding active dentists	Professionally active dentists	Population (in 000's)[1]	Persons per active dentist	Percent of active dentists		Percent of practitioners using auxiliaries
				Under 40 years	55 years or more	
Total	356	993.2	2,790	26	31	82
Androscoggin	36	87.9	2,442	36	36	77
Aroostook	20	108.7	5,435	15	20	80
Cumberland	103	189.9	1,844	28	30	85
Franklin	7	19.7	2,814	29	43	86
Hancock	12	32.3	2,692	25	33	80
Kennebec	38	91.3	2,403	11	26	84
Knox	11	28.8	2,618	27	45	82
Lincoln	6	18.6	3,100	50	33	67
Oxford	15	44.4	2,960	20	33	86
Penobscot	40	134.1	3,353	25	20	77
Piscataquis	6	16.7	2,783	33	33	83
Sagadahoc	7	23.7	3,386	43	14	86
Somerset	10	39.6	3,960	40	20	90
Waldo	4	23.0	5,750	50	50	100
Washington	8	31.8	3,975	12	75	63
York	33	102.7	3,112	24	33	79

[1] Copyright 1965 Sales Management Survey of Buying Power; further reproduction is forbidden.

DENTISTS LICENSED IN MARYLAND

A total of 2,130 dentists registered with the Maryland State Board of Dental Examiners in January 1965 (Table 1). Of this total, 1,982 completed the questionnaire, for an overall response rate of 93 percent. The response rate for dentists actually located in Maryland was somewhat higher, since nonresponse was more frequent for those who were outside the State or on active duty with the Armed Forces. As it was, an extremely large number of those responding are located outside Maryland. More than 500 are in another State or abroad and another 150 are on active duty with the Armed Forces. Together, these two groups of dentists represent about a third of all licensed respondents.

Table 1.--Location and Military Status of Dentists Licensed in Maryland

Location and military status	All dentists	Percent of dentists
Total	2,130	100
Respondents	1,982	93
Nonrespondents	148	7
Respondents	1,982	100
Civilians in Maryland	1,312	66
Civilians in another State	513	26
On active duty with Armed Forces	149	8
Not reported	8	*

* Less than one-half of one percent.

Table 2.--Percent Holding Licenses in Other States

Licenses held	All respondents	Civilian dentists		Armed Forces
		In Maryland	Out-of-State	
Total	100	100	100	100
Maryland only	49	68	-	55
Licensed in 1 other State	37	25	68	34
Licensed in 2 other States	11	6	24	10
Licensed in 3 or more States	3	1	8	1

Of all dentists responding, about half hold a license in one or more additional States. About 11 percent are licensed in two other States and 3 percent are licensed in three or more States. As a result, the total number of State licenses held by the respondents exceeds 3,300. Although the majority of those holding multiple licenses are currently located outside the State, multiple licensure is also common among Maryland's dentists. Nearly a third of all dentists located in Maryland are licensed in one other State, 6 percent in two others, and 1 percent in three or more other States.

Civilian Dentists in Maryland

Sources of Supply

Dental schools.--Graduates of 40 dental schools are represented among Maryland's dentists, including graduates of two Canadian schools and of one dental school, George Washington, which is no longer in existence. However, the great majority of Maryland's dentists--68 percent--are graduates of the School of Dentistry of the University of Maryland. Of the remainder, 24 percent are accounted for by the seven out-of-State schools which have produced 10 or more of Maryland's dentists. Those in the District of Columbia, notably Georgetown, and in Pennsylvania have long

Table 3.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Percent of dentists			
			Year of graduation		
		Total	After 1955	1941-1955	1940 or earlier
Total	1,312[1]	-	29	40	31
Maryland	892	68	60	63	82
Georgetown	152	12	16	15	4
Howard	81	6	11	5	4
Pennsylvania	28	2	2	2	2
Emory	18	1	-	2	1
Pittsburgh	17	1	2	1	1
Temple	16	1	1	2	1
Meharry	10	1	1	1	1
Other schools	98	8	7	9	4

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A).

been the principal out-of-State sources of supply, and in recent years have accounted for an increasing percent. About 32 percent of those graduating within the last 10 years are from these schools, as compared with 12 percent for those who were graduated prior to World War II.

Dentists relocating in Maryland.--Maryland has relatively few in-migrant dentists. Only 14 percent of all dentists currently located in Maryland report that they had previously been located elsewhere (Table 4). The largest number had moved from the District of Columbia and nearby Pennsylvania and Virginia. Among the 31 more distant States whose dentists migrated to Maryland, New York contributed the largest number. Among other States accounting for five or more were North Carolina and New Jersey (eight each), Kentucky and Florida (seven), Massachusetts (six), and Michigan and Illinois (five each). Ten dentists reported that they had previously been located in a foreign country.

Table 4.--In-Migrant Dentists

Last previous location	Number of dentists	Percent of dentists
Total	1,312	100
Previously located elsewhere	187	14
District of Columbia	40	3
Pennsylvania	19	1
New York	12	1
Virginia	11	1
Other	105	8
Never located elsewhere	1,125	86

Personal Characteristics

Age and sex.--Only 5 of the 1,312 civilian dentists responding in the survey are women. Since they are so few, data will noc be shown separately for them. Ages from 26 to 88 were reported by dentists responding in the survey. Overall, however, Maryland's dentists are a relatively young group. The median reported age was 43.7. Twenty percent were under 35 years old and 17 percent were between 35 and 39 years of age. Nonetheless, there was also a substantial representation of dentists who were well along in years. Thirteen percent--168 dentists--were 65 years old or over, and in this group were 96 who were 70 years old or over, including 44 who had reached 75 years of age.

Table 5.--Sex and Age

Sex and age	Number of dentists	Percent of dentists
Total	1,312	100
Male	1,307	100
Female	5	*
Age		
Under 30	64	5
30 - 34	199	15
35 - 39	226	17
40 - 44	226	17
45 - 49	149	12
50 - 54	126	10
55 - 59	80	6
60 - 64	70	5
65 - 69	72	6
70 - 74	52	4
75 & over	44	3

* Less than one-half of one percent.

Advanced training.--Approximately 28 percent of Maryland's dentists have had some kind of advanced training. Although the number completing advanced academic work is less than the number who have served internships or residencies, Maryland's dental force numbers among its members 14 dentists who have earned an additional doctorate. In addition, 47 dentists

Table 6.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
Total	1,312	100
With advanced training	369	28
With no advanced training	943	72
Clinical training		
Residency completed	75	6
Internship completed	215	16
Academic training		
Ph.D., M.D., or other doctors	14	1
M.A., M.S., or other masters	47	4
Postgraduate 1 year or more (no degree)	104	8

have earned a master's degree since leaving dental school, and another 104, although they hold no advanced degree, have completed one year or more of academic work at the postgraduate level.

The data in Table 7 reflect the growing tendency for dentists to seek training beyond receipt of their dental degree. The percentage of dentists reporting advanced academic training amounts to 17 percent for those under 40 years old, and declines to 12 percent for those 40 to 54 years of age and to only 7 percent for those 55 and over. Residencies show the same pattern by age. This explains, in part, the relatively low figure for those under 40 completing only an internship. However, most of the explanation lies in the fact that a relatively larger percentage of the younger members of this group are on active duty with the Armed Forces. In addition, many civilian dentists in this age group are still in the process of training.

Table 7.--Advanced Training, by Age

Age of dentist	Number with advanced training	Percent of dentists			
		With advanced training	With academic training	With residency	With internship
Total	369	28	13	6	16
Under 40	149	30	17	7	15
40 - 54	171	34	12	6	23
55 & over	48	15	7	2	8

Distribution and Current Status

Distribution of dentists.--Most of Maryland's dentists are located in the State's two major metropolitan centers. The Baltimore area, consisting of Baltimore City and four suburban counties, accounts for 54 percent of the State's total dental force (Table 8). The two suburban counties of

Table 8.--Distribution by County Group

County group	Number of counties	Number of dentists	Percent of dentists
All counties	24	1,312	100
Baltimore metropolitan areas	5	711	54
Washington, D.C. suburbs	2	392	30
Nonmetropolitan county groups			
Central city 25,000-49,999	2	59	5
Central city 10,000-24,999	3	56	4
Central city 5,000-9,999	4	52	4
Central city 2,500-4,999	3	15	1
Central city under 2,500	5	20	2

Note: Seven dentists failed to indicate their county location.

the Washington, D.C. metropolitan area--Montgomery and Prince Georges--account for another 30 percent. Dentists in the remainder of the State tend to be concentrated in the counties which contain a relatively large city. More than half of the 16 percent who are located in the 17 counties which are not part of a metropolitan area are in the 4 counties of the State with a central city of 10,000 or more population. The 12 counties which do not have a city this large account for only 7 percent of the dentists although more than 11 percent of the population reside there.

There are marked differences in the age distribution of dentists in the various county groups. A relatively large concentration of older dentists exists, for example, in the Baltimore area, but there are practically none in the two suburban Washington, D.C. counties (Table 9). The median age of Baltimore area dentists is 46.5, compared with 39.9 for those in the Washington area. Long-established dentists, of course, tend to be located in the central sections of metropolitan areas and Baltimore is no exception. Most of the older dentists are to be found in Baltimore City. However, there are relatively few young dentists in the suburban Baltimore counties as compared with the Washington suburbs. Only 46 percent of the dentists in the four outlying counties of the Baltimore area are under 40 years old, compared with better than half of those in Montgomery and Prince Georges Counties.

Table 9.--Median Age and Age Distribution, by County Group

County group	Median age	Percent of dentists				
		Under 40	40-54	55-64	65-74	75 and over
All counties	43.7	37	38	12	10	3
Baltimore metropolitan areas	46.5	31	37	15	12	5
Washington, D.C. suburbs	39.9	51	41	5	3	*
Nonmetropolitan county groups						
Central city 25,000-49,999	44.4	32	39	17	7	5
Central city 10,000-24,999	47.2	28	43	9	18	2
Central city 5,000-9,999	43.1	40	33	10	10	7
Central city 2,500-4,999	42.5	40	46	7	7	-
Central city under 2,500	51.3	37	21	16	21	5

* Less than one-half of one percent.

Among the counties which lie outside the metropolitan areas, those in the smallest size class--counties with no city of more than 2,500 residents--have relatively the largest number of older dentists. Twenty-six percent are 65 years old or over and about 42 percent are 55 or more. However, dentists under 40 constitute the same percent of dentists in these counties as they do in the State as a whole. By contrast, the 5 nonmetropolitan counties with the largest central cities--those with a town of at least 10,000--have relatively few dentists under 40 as compared with the State average.

About 10 percent of the dentists in Maryland maintain a second office location. Of these dentists, slightly less than half reported their second office in a county different from the one in which their primary office is located. By far, the majority of second offices are located in the two metropolitan areas of the State.

Professional status.--Nearly all dentists reported that they are active in the profession (Table 10). Only 3 percent reported themselves wholly retired or as engaged primarily in some type of nondental employment. Although most of the retired dentists were in the older groups, relatively few older dentists responding in the survey regarded themselves as fully retired (Table 11). Three in every 4 of those 75 years old and over, for example, reported that they are still in practice. A larger share of these dentists are located in the nonmetropolitan counties.

Table 10.--Professional Activity Status

Activity status	Number of dentists	Percent of dentists
Total	1,312	100
Active in profession	1,271	97
Inactive in profession	35	3
In nondental employment	7	1
Retired	28	2
Status not reported	6	*

* Less than one-half of one percent.

Table 11.--Status Reported by Dentists 65 Years and Over

Age	Number of dentists	Fully retired	Still active
Total	168	19	149
65 - 69	72	-	72
70 - 74	52	8	44
75 & over	44	11	33

Active dentists in relation to population.--There was one professionally active respondent for every 2,710 persons in Maryland in 1965 (Table 12). The number of persons per active dentist ranged from 1,656 in Montgomery County to more than 9,000 in Charles and Somerset Counties (see Appendix Table B for individual county data). Including Montgomery County, only 5 counties within the State had dentist-population ratios as favorable as the State average. These were Baltimore City (1,919), Allegany (2,669), Talbot (2,550) and Wicomico (2,705). By contrast, there were 11 counties with ratios well in excess of one dentist to 4,000 persons. As the data in Table 12 reveal, the ratio varied with the size of the population center, the metropolitan areas having the most favorable ratios and the smaller counties having progressively fewer dentists in relation to population. The one exception is the group of counties with a central city of 10,000 to 25,000 residents. However, since a relatively large number of the dentists in this group of counties are in the older age groups, the dentist-population ratio probably tends to overstate the amount of dental service available.

Table 12.--Distribution of Dentists

Type of area	Professionally active dentists	Civilian population	Persons per dentist
All areas	1,271	3,444,300	2,710
Baltimore metropolitan area	678	1,823,900	2,690
Washington, D.C. suburbs	388	878,500	2,264
Nonmetropolitan county groups			
Central city 25,000-49,999	58	187,000	3,224
Central city 10,000-24,999	55	163,400	2,971
Central city 5,000-9,999	51	215,000	4,216
Central city 2,500-4,999	14	62,400	4,457
Central city under 2,500	20	114,100	5,705

Professional Activity

Current employment.--As might be expected, self-employment predominates among dentists who are active in the profession--about 91 percent are engaged primarily in private practice, and another 2 percent maintain a private practice as a secondary activity (Table 13). In addition, 3 percent are employed in the private practices of other dentists as their principal employment and another 3 percent hold a position of this type as a supplement to their primary employment. Most of the latter group are dentists in practice for themselves who work for another dentist on a part-time basis.

Table 13.--Current Employment of Professionally Active Dentists

Type of employment	Principal employment		Percent with other dental employment			
	Number employed	Percent	Total[1]	Private practice	Dental school	Other
Total	1,271	100	18	5[2]	4	10
Self-employed	1,160	91	14	2	4	10
Employed by other dentists	36	3	1	*	*	*
On staff of dental schools	26	2	1	1	*	*
Employed by State or local government	23	2	1	1	*	*
Employed by Federal Government	8	1	*	*	-	-
Other dental employment	18	1	*	*	-	-

[1] Columns add to more than total because some dentists reported more than one other dental employment.

[2] Includes 2 percent who maintain own practices and 3 percent who are employed in practices of other dentists.

* Less than one-half of one percent.

Only 6 percent of all professionally active dentists are primarily engaged in some other type of activity. Two percent are teaching either at the School of Dentistry in Baltimore or in one of the Washington dental schools, 2 percent are State or local government employees, one percent work for the Federal Government, and the remaining one percent are engaged in some other kind of dental employment.

Activity last year.--About 97 percent of all dentists reporting on their professional activity in Maryland last year indicated that they had provided care for patients (Table 14). When measured in terms of professional time, patient care accounted for nearly 95 percent of the total time devoted to dental activities in Maryland in that year. Although there were 98 dentists--8 percent of the total--who had engaged in teaching either on a full or part-time basis during the year, teaching accounted for less than 3 percent of the professional time, and research, while claiming the attention of about 3 percent of the dentists, accounted for only 1 percent of all professional time. The time spent in all other dental activities, principally in the receipt of training, accounted for less than 2 percent of the total, though nearly 5 percent of the dentists reported that they had devoted at least some time to some other type of professional activity.

Table 14.--Distribution of Professional Activity Last Year

Type of activity reported	Located in Maryland last year		Percent of total professional time reported
	Number	Percent	
Total	1,171[1/]	100[1/]	100
Patient care	1,141	97	95
Teaching	98	8	3
Research	36	3	1
Other	53	5	2

1/ Individual items add to more than total because some dentists spent time in more than one type of activity.

Dentists reporting on time spent last year in providing patient care devoted an average of 47.5 weeks to this activity and worked an average of 40.4 hours per week. The figures in Table 15 on weeks and hours per week show that large numbers of reporting dentists devoted exceptionally long hours to this activity. About one in every 6 reporting dentists spent the equivalent of 8 hours or more per day six days per week, for 48 or more weeks during the year.

Table 15.--Time Spent in Patient Care Last Year

Weeks of activity reported	Dentists providing patient care	Percent of total				
		48 hrs. or more	41-47 hrs.	40 hrs.	35-39 hrs.	Under 35 hrs.
Total reporting time spent	100	19	18	28	19	16
50 weeks or more	44	9	9	13	8	5
48-49 weeks	34	7	6	11	6	4
40-47 Weeks	16	2	2	3	4	5
Less than 40 weeks	6	1	1	1	1	2

Dentists under 30 years of age, many of whom were just establishing their practices, put in the longest work week--45.7 hours on the average--and devoted the fewest weeks of the year to this activity of any group. By contrast, dentists 65 years old or over, worked the shortest number of hours--32.9 on the average--and devoted almost as many weeks to this activity as most younger dentists. In general, average hours per week dropped off fairly consistently with advancing age but weeks worked tended to hover around 48 weeks for most of the age groups.

Practice Characteristics

Limited practices.--Approximately 12 percent of the dental practitioners--156 dentists--reported that they limit their practices to a dental specialty (Table 16). Specialization is almost as common in the counties outside the metropolitan areas as it is within, with 9 percent of those located in the nonmetropolitan counties reporting that they limit their practices as compared with 13 percent of those in the Baltimore and Washington areas. These totals may represent an overcount of those who practice one specialty exclusively. The question which appeared on the questionnaire referred specifically to a single area of practice, but many dentists who limit their practices to combinations of two specialty areas (for example, prosthodontics and oral surgery or orthodontics and pedodontics) checked both items, and there is some evidence that not all cases of this type were identified in editing. However, there is no doubt that orthodontics and oral surgery are the principal areas of specialization.

Table 16.--Limited Practices

Location	Limited practice	Percent of dental practitioners				
		All specialty areas	Ortho-dontics	Oral surgery	Pedo-dontics	Other
All areas	156	12	5	4	1	2
Baltimore metropolitan area	87	13	5	4	1	3
Washington, D.C. suburbs	52	13	7	4	1	1
Nonmetropolitan counties	15	9	2	4	1	2

Use of auxiliaries.--Less than 3 in 4 dental practitioners (i.e., dentists working any time at the chair) reported that they employ auxiliary personnel (Table 17). Nearly all who do so, however, report that they employ at least one auxiliary on a full-time basis. Only 8 percent report that they employ part-time personnel exclusively. Of the various types of personnel, dental

Table 17.--Dentists Employing 1 or More Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With only part-time personnel	With one full-time employee (or more)
Total	1,253	100	8	63
With no auxiliary	360	29	-	-
With one or more auxiliaries	893	71	8	63
With assistant	773	62	7	55
With hygienist	120	10	7	3
With laboratory technician	63	5	3	2
With secretary or receptionist	323	26	7	19
With other type of personnel	56	4	2	2

assistants are those most frequently employed. About 62 percent of all practitioners employ an assistant, including 55 percent who use one full time. A fourth of all practitioners employ secretaries and receptionists, and by far the majority employ at least one on a full-time basis. By contrast, dental hygienists and laboratory technicians are only infrequently employed, and most dentists employ them only on a part-time basis. One dentist in 10 uses a hygienist in his dental practice and one in 20 employs a laboratory technician.

Dental practitioners in the Baltimore area are less likely to use auxiliaries than are other dentists in the State (Table 18). Only 66 percent report the employment of an auxiliary, compared with 77 percent for dentists located elsewhere. Only the use of dental laboratory technicians is more common in Baltimore than in the remainder of the State. Dental hygienists are much more frequently employed in suburban Washington, D.C., and dental assistants are more widely employed both in suburban Washington and in the nonmetropolitan counties. Dentists in the latter group of counties more frequently employ a full-time assistant than do those in either of the metropolitan areas.

Table 18.--Dentists Employing Auxiliaries, by Location of Dentist

Type of auxiliary	Percent of dental practitioners		
	Baltimore metro area	Washington, D.C. suburbs	Other counties
With one or more auxiliary employees	66	77	77
With assistant	56	69	69
With hygienist	6	19	4
With technician	6	5	1
With one full-time employee or more	59	66	72
With full-time assistant	51	58	65
With full-time hygienist	2	7	2
With full-time technician	2	2	1

Table 19 presents the overall rate of auxiliary utilization for dentists of various ages in these three major areas of the State, and for the State as a whole. In all areas, peak utilization occurs among dentists 40 to 54 years of age, and it is highest for dentists of this age who are located in the nonmetropolitan counties of the State. The rate for dentists in this age

Table 19.--Dentists Employing Auxiliaries, by Location and Age of Dentist

Age of dentist	Percent of dental practitioners			
	All areas	Baltimore metro area	Washington, D.C. suburbs	Other counties
With one or more auxiliaries	71	66	77	77
Under 40	75	71	77	87
40-54	81	78	83	86
55 or over	47	46	50	52

group ranges from Baltimore's 78 percent to 83 percent for the Washington suburbs and 86 percent in the remainder of the State. Rates for dentists under 40 are only slightly lower, but for dentists 55 and over they fall to around the 50 percent level. Again, however, they are lowest in the Baltimore area and highest for dentists in the nonmetropolitan counties.

Almost 12 percent of the dentists in Maryland reported one or more vacant positions for auxiliary personnel. Approximately two-thirds of the vacancies were for hygienists and assistants. Most dentists reporting a hygienist vacancy did not currently employ a hygienist whereas most dentists desiring to employ an assistant were already utilizing at least one assistant.

Weeks and hours worked.--Although approximately 86 percent of all dentists who were in private practice in Maryland in the previous year reported on both the number of weeks and hours they had worked during that year, the percent reporting was a low 65 percent for those 65 years old and over. Since those not responding were likely to be those who are least active, the estimates on time worked by dentists in this age group are probably high. Even so, the figures presented in Table 20 show how activity tapers off among older dentists. Only a third of those 65 years old and over reported that they worked an average of 40 hours or more for 48 weeks or more out of the year.

Table 20.--Time Spent in Practice Last Year, by Age

Age group	Dentists reporting time spent in private practice		Percent working	
	Number	Percent of total	48 weeks or more 40 hrs/wk or more	Part year or less than 40 hrs/wk
Total	906	86	53	47
Under 35	161	94	58	42
35 - 44	355	89	56	44
45 - 54	220	86	50	50
55 - 64	94	81	54	46
65 & over	73	65	33	67

However, if reporting older dentists are representative of all those in practice, then those older dentists who practice in small communities are much more likely to devote this amount of time to their dental practices than are older dentists who practice elsewhere. Table 21 presents data for several county groups on the weeks and hours spent in dental practice by dentists in three broad age groupings. Among dentists 60 years old or over who reported from counties where every town had a population of less than 10,000, approximately 55 percent had devoted 48 weeks to their dental practices for an average of 40 hours or more each week. This was a considerably larger percentage than in any other group of counties.

Table 21.--Time Spent in Practice, by County Group and Age

County group	Percent working 40 hrs/wk or more for 48 weeks or more			
	All ages	Under 35	35-59	60 and over
All areas	53	58	54	39
Baltimore metropolitan area	53	60	54	42
Washington, D.C. suburbs	53	55	54	31
Nonmetropolitan counties				
Central city 10,000-49,999	51	69	52	31
Central city under 10,000	54	62	53	55

Out-of-State Dentists

State Location

There are dentists in 33 States, the District of Columbia, and Puerto Rico who maintain an active license in Maryland. Most of these out-of-State dentists are in nearby States--28 percent are in the District of Columbia and another 21 percent are in States adjacent to Maryland (Table 22).

Table 22.--Out-of-State Dentists, by State

State location	Number of dentists	Percent of dentists
Total	513	100
District of Columbia	143	28
Florida	47	10
New Jersey	45	9
New York	35	7
Virginia	35	7
Pennsylvania	29	6
West Virginia	23	5
California	17	4
Connecticut	17	4
Delaware	14	3
Massachusetts	14	3
North Carolina	11	2
23 other States and Puerto Rico	62	13

Only 2 percent report that they are retired. By far the majority (77 percent) are in dental practice. Some 8 percent of the dentists are engaged in other dental activity which consists primarily of individuals serving internships or residencies while about 5 percent are on the faculties of out-of-State dental schools.

Out-migrant Dentists

About 1 in every 10 out-of-State respondents reported they had formerly been located in Maryland. Over one-half of these dentists are now located in the District of Columbia and adjacent States--16 dentists in the District, 6 in West Virginia and 5 each in Pennsylvania and Virginia. Florida has also attracted 6 dentists once located in Maryland. The remaining 24 out-migrant dentists are in 13 other States.

The greatest out-migration among reporting dentists has occurred in recent years, in 1960 or later (Table 23). About two-thirds of this group were under 40 years of age in 1965, reflecting at least in part the relatively greater mobility of young dentists in relation to older practitioners. The low proportion of out-migrants prior to 1950, 19 percent, can be attributed to the fact that the longer a dentist remains out of State, the less likely he is to renew his license in the State he has left.

Table 23.--Year Out-migrant Dentists Left State, by Age in 1965

Year left	Percent of out-migrants	Age distribution		
		Under 40	40-49	50 and over
Total	100	40	33	27
1960 or later	44	30	11	3
1950 - 1959	37	8	19	10
Before 1950	19	2	3	14

Appendix Table A.--Summary Statistics Used in Text

	Number of dentists
Total dentists licensed in Maryland, January, 1965	2,130
Respondents -- total dentists participating in survey (number not reporting current location or military status - 8)	1,982
Civilian dentists in Maryland[1] (designated simply as "dentists" in text tables) (number not reporting: age - 4, county location - 7, principal current employment - 6)	1,312
Professionally active dentists[2]	1,271
In limited practice[3]	156
Dental practitioners[4]	1,253
Located in Maryland last year:	
Reported professional activity[5]	1,171
Dentists providing patient care[6]	1,141
Reported time spent in patient care[7]	974
Dentists in private practice[8]	1,059
Reported time spent in practice[9]	906
Out-of-State dentists -- civilian respondents not located in Maryland	513

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[1] All responding dentists who currently work in Maryland (excluding those in the Armed Forces) or who are retired and currently live in the State.

[2] All active civilian dentists currently in Maryland -- excludes 28 dentists who are fully retired, 7 who are engaged principally in a nondental activity, and 6 who did not report their principal current activity.

[3] Dentists who reported they limited their practice to a dental specialty.

[4] All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

[5] Dentists located in Maryland last year who indicated type(s) of activity in which they engaged.

[6] All dentists who engaged in patient care last year, either as a primary or secondary activity.

[7] Dentists reporting both hours and weeks spent in patient care last year.

[8] Dentists who reported they were primarily self-employed both currently and last year.

[9] Dentists reporting both hours and weeks spent last year as a self-employed dentist.

Appendix Table B.--County Data

County	Civilian population (in 000's)	Active civilian dentists[1]	Persons per dentist	Percent of active dentists		
				Under 40	55 years or more	Using auxiliaries
All counties	3,444.3	1,271	2,710	38	23	71
Allegany	85.5	32	2,669	31	28	81
Anne Arundel	247.3	55	4,496	45	22	69
Baltimore	549.0	109	5,037	44	15	68
Baltimore City	925.1	485	1,919	26	35	66
Calvert	18.7	4	4,675	25	75	33
Caroline	19.2	6	3,200	20	60	83
Carroll	57.6	21	2,743	48	19	67
Cecil	55.8	8	6,975	25	50	63
Charles	36.7	4	9,175	50	25	100
Dorchester	31.0	7	4,429	14	43	71
Frederick	78.3	28	2,796	43	25	78
Garrett	22.0	4	5,500	75	0	50
Harford	89.5	25	3,580	44	16	69
Howard	44.9	8	5,613	75	12	43
Kent	18.1	5	3,620	40	20	100
Montgomery	412.3	249	1,656	48	9	78
Prince Georges	466.2	139	3,354	55	6	77
Queen Annes	17.5	2	8,750	0	50	100
St. Mary's	44.2	8	5,525	50	25	100
Somerset	19.6	2	9,800	100	0	100
Talbot	25.5	10	2,550	40	30	80
Washington	101.6	26	3,908	35	27	77
Wicomico	54.1	20	2,705	14	29	72
Worcester	24.7	7	3,529	29	0	86

[1] Excludes dentists reporting themselves wholly retired or engaged exclusively in nondental employment (and those who failed to indicate the nature of their current activity). The total includes seven dentists who failed to indicate their county location.

DENTISTS LICENSED IN MASSACHUSETTS

Of the 3,953 dentists who registered with the Board in January 1965, a total of 3,620, or 92 percent, completed the questionnaire (Table 1). About 87 percent of the responding dentists were civilians located in Massachusetts at the time of the survey. Civilians located in other States accounted for 9 percent of the respondents, and 4 percent were dentists on active duty with the Armed Forces. Only 33 of the responding dentists were women, and all but 5 were located within the State.

Table 1.--Location and Military Status of Dentists Licensed in Massachusetts

Location and military status	All dentists	Percent of dentists
Total licensed	3,953	100
Respondents	3,620	92
Nonrespondents	333	8
Respondents	3,620	100
Civilians in Massachusetts	3,159	87
Civilians in another State	327	9
On active duty with Armed Forces	132	4
Not reported	2	*

* Less than one-half of one percent.

For the 333 dentists not responding to the survey, location and military status, as well as certain other items of information, were obtained from the 1966 American Dental Directory, published by the American Dental Association, and from records maintained by the Commonwealth of Massachusetts Board of Registration of Dental Examiners. Because the survey response rate was high, the data presented in this report are limited to responding dentists with the exception of the discussion of age of the dentists where the nonrespondent data are known to differ from the respondent data.

Almost three-fourths (73 percent) of the responding dentists are licensed only in Massachusetts. Twenty-one percent are licensed in just one other State, and 6 percent are licensed in two or more additional States. In total, the number of licenses held by Massachusetts respondents exceeds 4,800. For civilian dentists actually located in the State, the percentage licensed only in Massachusetts is a high 81 percent. Multiple licensure is more common among civilian dentists who are located in other

States. While licenses are held in two or more other States by only 3 percent of the in-State dentists, over one-third of all out-of-State dentists are licensed in at least two other States in addition to Massachusetts.

Civilian Dentists in Massachusetts

Sources of Supply

Dental schools.--The two dental schools in Massachusetts have trained two-thirds of the State's total dentist supply (Table 2). Tufts University has made the largest contribution, accounting for more than half of the total dental force, while Harvard University, with a considerably smaller contribution, has trained about one-sixth of the dentists. Another one-fifth of the dental force are graduates of 9 dental schools located in 3 Eastern States--New York, Pennsylvania, Maryland--and the District of Columbia. Among these schools, the University of Maryland and Georgetown University are the major contributors, having between them trained one of every 10 dentists in the State. Other dental schools in these States which have made important contributions to the Massachusetts dentist supply include the University of Pennsylvania, followed by

Table 2.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	3,159[1]	-	785	1,087	1,268
		(Percent distribution by school)			
Tufts	1,641	52	48	54	54
Harvard	496	16	7	9	27
Maryland	186	6	7	5	6
Georgetown	143	4	9	5	1
Pennsylvania	118	4	5	5	2
New York University	62	2	3	3	*
Temple	61	2	3	2	1
44 other schools	437	14	18	17	9

* Less than one-half of one percent.

[1] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. For each item where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A.)

New York and Temple Universities. The remaining one-eighth of Massachusetts dentists are graduates of 40 other dental schools, including 6 Canadian schools, and 2 schools (Barnes and Ohio Colleges) which are no longer in existence. Schools in the North Central States have contributed a large proportion of these dentists, led by Loyola University of Chicago, St. Louis University, and Northwestern, which account for about 43 dentists each. The only other school to contribute as many as 35 of the State's dentists is McGill University in Montreal.

One-fourth of the State's dentists have graduated from dental school within the last 10 years. By comparison, a full 40 percent were graduates during the years prior to World War II. The proportionate contribution of the various schools to the Massachusetts dentist supply has changed over the years. The two dental schools in Massachusetts trained four-fifths of the graduates prior to 1941, but only 55 percent of the dentists who are graduates of the past 10 years. The sharpest decline has occurred in the role of Harvard University as a source of dentist supply. Over one-fourth of all dentists in the State who were graduated prior to World War II completed their dental education at Harvard University; but among graduates of the past 10 years now located in Massachusetts, only one of every 14 are Harvard graduates. The contribution of Tufts University has decreased slightly from 54 percent of the dentists graduating prior to 1955 to 48 percent of those who graduated in later years. The reduced contribution of the Massachusetts schools has been partially compensated for by increases from other eastern schools in New York, Pennsylvania, Maryland and the District of Columbia. About 29 percent of those dentists graduating in the past 10 years are from these schools in contrast to 12 percent of those who graduated prior to World War II. A small increase has also taken place in the proportion of graduates from dental schools located in the North Central States. These schools have supplied 10 percent of the State's dentists since 1955, compared to 4 percent of the graduates prior to 1941.

Dentists relocating in Massachusetts.--Only 127, or 4 percent, of the dentists in Massachusetts reported practicing as a civilian in another State immediately prior to assuming their present location in Massachusetts. The nearby States of New York, Pennsylvania, Rhode Island, and Connecticut have together contributed almost one-half (46 percent) of these dentists. The remaining in-migrants were formerly located in 24 other States, the District of Columbia or abroad. More than 30 percent of the in-migrant dentists came to Massachusetts in 1960 or later, and another 35 percent moved to the State during the 1950's.

Personal Characteristics

Age.--The median age of reporting dentists was 47.1 years. The proportion of dentists 55 years of age or older was almost twice as great as the proportion under 35 (Table 3). One-fifth of the total supply--654 dentists--were 65 years old or over, and in this group were 370 who were at least 70 years old, including 163 who had reached the age of 75.

Table 3.--Age Distribution

Age in 1965	Number of dentists	Percent of dentists
Total	3,159	100
Under 35	577	18
35 - 39	388	12
40 - 44	436	14
45 - 49	401	13
50 - 54	259	8
55 - 59	176	6
60 - 64	242	8
65 - 69	284	9
70 & over	370	12

Dentists not responding to the survey were older than the respondents, with a median age more than 7 years higher--54.9 years. Moreover, better than one-third of the nonrespondents were 65 or over, a proportion considerably greater than among respondents. Presumably, a substantial number of retired dentists elected not to return the survey questionnaire.

Advanced training.--Almost 30 percent of Massachusetts' dentists have taken one or more years of advanced clinical or academic training (Table 4). By far the greatest proportion, 15 percent, have taken clinical training as an intern or resident, while 7 percent reported academic training as a graduate or postgraduate student. Another 7 percent reported completion of both clinical and academic training.

Table 4.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
With advanced training	927	29
Clinical training only	473	15
Academic training only	226	7
Both clinical and academic	228	7
Clinical training		
Residency completed	166	5
Internship completed	535	17
Academic training		
Ph.D., M.D., or other doctor's degree	29	1
M.A., M.S., or other master's degree	102	3
Postgraduate 1 year or more (no degree)	323	10

The State's young dentists are more likely than their older colleagues to seek additional training after receiving their dental degrees. Differences by age groups are particularly striking when academic training is considered. Almost one in every four dentists under 40 has had a year or more of graduate or postgraduate study, compared with one of every 7 dentists between 40 and 54, and only one in every 16 of those 55 and over.

Distribution and Current Status

Distribution of dentists.--Massachusetts has been divided into five regions for the presentation of data on the geographical distribution of dentists. The regional division is based on health service areas as previously developed by the Public Health Service for analyzing the distribution of health services. These boundaries coincide with Rand McNally trading areas, determined by consideration of such factors as physiography, population, economic activities, and transportation. The five regions have been named Boston, Springfield, Worcester, New Bedford, and Pittsfield, based on the largest city contained in each region.

Over 70 percent of the 3,159 reporting dentists in Massachusetts are concentrated in the 5-county Boston region (Table 5). Two counties in this region, Middlesex and Suffolk, together have 43 percent of the State's dentists. Another 23 percent are located in Essex and Norfolk Counties, while only 5 percent are located in Plymouth County. The Springfield region, composed of Hampden, Hampshire and Franklin Counties, has 10 percent of the dentist supply. Another 10 percent of the State's dentists are located in the one-county Worcester region. The New Bedford region, formed by Bristol, Barnstable, Dukes and Nantucket Counties, has only 7 percent of the dentist supply. The remaining 2 percent of Massachusetts' dentists are located in the Pittsfield region, which consists of Berkshire County.

Table 5.--Distribution of Dentists by Region and County

Region and county	Number of dentists	Region and county	Number of dentists
Boston region	2,228	Worcester region	310
Middlesex	710	Worcester	310
Suffolk	636		
Norfolk	373	New Bedford region	226
Essex	351	Bristol	165
Plymouth	158	Barnstable	57
		Dukes	2
Springfield region	317	Nantucket	2
Hampden	240		
Hampshire	43	Pittsfield region	78
Franklin	34	Berkshire	78

Geographical differences in age.--The median age of dentists by region varies slightly, ranging from 45.6 in Springfield to 48.7 in Worcester (Table 6). Age differences among individual counties within the regions, however, are much more pronounced. For example, the median age of dentists in Suffolk County is 52.6 years. Moreover, only 16 percent of the county's dentists are under age 35, and 47 percent are 55 years old or over, including 30 percent who are at least 65. As the central section of the Boston metropolitan area, Suffolk County represents the location of long-established dentists who tend to be concentrated in the hub of large metropolitan areas. By contrast, the median age of dentists in Plymouth County, in the same region, is 43.0 years; 29 percent of its dentists are under 35 years of age, and only 30 percent have reached the age of 55. Similarly, dentists in the remaining three counties of the Boston region are considerably younger than those located in the city of Boston. In the Springfield region, Franklin County has the youngest dentists, with a median age of 44.3 years. By comparison, dentists in Hampshire County are, on the average, more than six years older--50.8 years. An even sharper contrast in age distribution is presented by counties in the New Bedford region. The median age of dentists in Bristol County is 45.5 years and only 26 percent have reached the age of 55. In Barnstable County, however, the median age is 60.0 years and 54 percent of the dentists are 55 or older.

Table 6.--Median Age by Region and County

Region and county	Median age	Region and county	Median age
Boston region	47.0	Worcester region	48.7
Plymouth	43.0	Worcester	48.7
Middlesex	44.4		
Norfolk	45.6	New Bedford region	47.0
Essex	47.2	Bristol	45.5
Suffolk	52.6	Barnstable	60.0
		Dukes	*
Springfield region	45.6	Nantucket	*
Franklin	44.3		
Hampden	45.1	Pittsfield region	48.2
Hampshire	50.8	Berkshire	48.2

* Median not shown because of small number of dentists.

Professional status.--Nearly all dentists in Massachusetts are active in the profession. Only 3 percent reported themselves either fully retired or engaged primarily in some type of nondental employment. As would be expected, a majority of the retired dentists are in the older age groups, but most of the older dentists who responded to the survey are at least partially active. Even among dentists 75 years old and over, only one-fifth reported that they are fully retired.

Active dentists in relation to population.--Based on the activity status of responding dentists, there was one professionally active dentist for every 1,766 persons in Massachusetts in 1965. The Boston region, with 1,629 persons per dentist, has the most favorable ratio in the State. At the other extreme, the New Bedford region has the least favorable ratio, with 2,388 persons for every active dentist (Table 7).

There is much greater variation in the ratios among the individual counties. Suffolk County, with 1,219 persons per dentist, has the most favorable ratio in the Boston region as well as in the State. However, since a relatively large number of the dentists in this county are in the older age groups, the ratio probably tends to overstate the amount of dentist manpower available. The number of persons per dentist increases to 1,567 in Norfolk County and 1,735 in Essex County. The two remaining counties in this region, Plymouth and Middlesex, have still higher ratios of 1,897 and 1,916 which exceed the average for the State. In the Springfield region the number of persons per dentist varies from a relatively favorable ratio of 1,635 in Franklin County to ratios of 1,989 and 2,607 in Hampden and Hampshire Counties which exceed the State average. The dentist manpower available for Hampshire County is actually less favorable than suggested by its ratio since the dentists in this county are older as a group than the dentists in all but two counties in the State. In the 4-county New Bedford region, only Barnstable County has a persons-per-dentist ratio more favorable than the State average. However, the dental service available in this county, as expressed by the ratio of 1,632 persons per dentist, tends to be overstated since a very large proportion of the dentists are in the older age groups. Although the 1,800 persons per dentist in Nantucket County only slightly exceeds the average for the State, the ratios of 2,631 and 2,900 in Bristol and Dukes Counties are the highest persons-per-dentist ratios in the State. The 1-county

Table 7.--Persons Per Dentist by Region and County

Region and county	Persons per dentist	Region and county	Persons per dentist
Boston region	1,629	Worcester region	2,001
Suffolk	1,219	Worcester	2,001
Norfolk	1,567		
Essex	1,735	New Bedford region	2,388
Plymouth	1,897	Barnstable	1,632
Middlesex	1,916	Nantucket	1,800
		Bristol	2,631
Springfield region	2,035	Dukes	2,900
Franklin	1,635		
Hampden	1,989	Pittsfield region	1,921
Hampshire	2,607	Berkshire	1,921

Worcester region has 2,001 persons per dentist and the Pittsfield region, consisting of Berkshire County, has 1,921, both of which are less favorable than the average for the State.

Professional Characteristics

Current employment.--Of the 3,047 responding dentists who reported that they were professionally active at the time of the survey, 93 percent are primarily engaged in private practice, including 91 percent who are self-employed and 2 percent who are employed by another dentist. Another 2 percent of the State's dentists are on the staffs of the dental schools at Harvard and Tufts Universities. The remaining 5 percent are either employed by Federal, State or local government agencies, or are engaged in other dental activities, including advanced clinical or academic training.

Almost one in every five active dentists reported one or more secondary dental activities in addition to his principal professional employment. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other secondary dental activities were reported, such as part-time employment in the practices of other dentists, providing dental care in hospitals, clinics, or schools, and serving as consultants to the Veterans Administration.

Activity last year.--About 97 percent of the dentists in Massachusetts who reported on their professional activity last year indicated they had provided care for patients. This activity accounts for 95 percent of the total reported professional time. About 11 percent of the dentists reported they spent some time in teaching and 3 percent reported some time in research, but only 2 percent of professional time was spent in these activities. Approximately 7 percent devoted some time to other dental activities, such as taking advanced training, but only 3 percent of professional time was spent in these activities.

Weeks and hours worked.--More than half of the dentists reporting on time spent last year in providing patient care spent at least 40 hours per week at this activity for 48 weeks or more during the year. Furthermore, almost one dentist in seven worked the equivalent of six days a week (48 hours or more) for at least 48 weeks.

The amount of time worked by dentists in private practice last year declined sharply with increasing age. Two-thirds of the dentists under 35 years of age report working at least 48 weeks and at least 40 hours per week. The proportion working this amount of time declines to 56 percent for those between 45 and 54 years old and decreases sharply to 27 percent among those 65 years old or over. Probably an even smaller proportion of all dentists 65 and over actually work this amount of time since about one-third of these dentists, including those who are likely to be least active, did not report on time spent in their practices.

Limited practice.--About one dentist in every eight reported that his practice is limited to a dental specialty, primarily orthodontia and oral surgery. Of the 354 specialists in the State, 269, or three-fourths, are located in the Boston region. Among individual counties in the State, Norfolk and Suffolk in the Boston region have the highest proportion of dentists who are specialists, 16 percent in each county. Specialization occurs least frequently in Hampshire and Barnstable Counties, where only 8 and 9 percent, respectively, of the dentists reported limiting their practices.

Use of auxiliaries.--Sixty-three percent of the dentists in Massachusetts employ one or more auxiliaries. Almost all who do so, however, employ at least one on a full-time basis. Only 7 percent reported that they employ part-time personnel exclusively. Dental assistants are more frequently employed than any other type of auxiliary, being utilized by 54 percent of all dental practitioners. Dental hygienists are employed by 22 percent of the dentists. By far the majority of the dentists employing assistants do so on a full-time basis, while more than half of those who employ hygienists utilize these auxiliaries only part time. One practitioner in 5 employs a secretary or receptionist, but only one in 25 employs a laboratory technician in his office.

By region, the proportion of dentists employing auxiliaries varies only from 62 percent in the Boston region to 66 percent in the Pittsfield and Springfield regions. Individual county differences are more pronounced, however (see Appendix Table B). Hampden County in the Springfield region has the highest proportion of dentists using auxiliaries--71 percent. Bristol County in the New Bedford region has an almost equal proportion, with 70 percent. The same region contains the county with the lowest proportion in the State--Barnstable, where only 43 percent of the dentists employ auxiliaries.

Auxiliary utilization also varies with the age of the dentist. The peak utilization occurs among practitioners between the ages of 35 and 44. About 78 percent of the dentists in this age group employ auxiliaries. In contrast, auxiliaries are utilized by only 36 percent of the practitioners 65 years old or over. Similarly, among the dentists under the age of 30 who are just starting their practices, only 41 percent report the employment of one or more auxiliaries.

About 9 percent of the responding dentists in Massachusetts reported one or more vacant positions for auxiliary personnel. Of these dentists, about 32 percent reported vacancies for full-time hygienists and 24 percent reported vacancies for full-time dental assistants. Nine of every 10 dentists reporting a vacancy already employ at least one auxiliary.

Out-of-State Dentists

Massachusetts licenses are maintained by at least 327 civilian dentists located in 33 States, the District of Columbia and Puerto Rico. Fifty-one percent of these out-of-State dentists are located in the five adjacent States of New York, Connecticut, Rhode Island, New Hampshire, and Vermont (Table 8). Maine, New Jersey, Pennsylvania, Florida, and California are the only nonadjacent States in which more than 1% of the out-of-State dentists are currently located. One half of all out-of-State dentists graduated from dental schools located in Massachusetts--39 percent from Tufts University and 11 percent from Harvard University.

Table 8.--Out-of-State Civilian Dentists, by Present Location

Present location	Number of dentists	Percent of dentists
Total	327	100
Adjacent States	167	51
New York	53	16
Connecticut	42	13
Rhode Island	34	11
New Hampshire & Vermont	38	11
Nonadjacent States	160	49

Out-of-State dentists are younger than those presently in Massachusetts. While as many as one-half of the out-of-State dentists are under 35 years of age, less than one-fifth of the dentists in Massachusetts are in this young age group. Furthermore, only 13 percent of the out-of-State dentists are 55 years old or over, compared with 35 percent of the in-State dentists.

Only 47 dentists, or 14 percent of the out-of-State respondents, reported that they had formerly been professionally active in Massachusetts. Of these dentists, about one-half are now located in adjacent States, and the other half are in 10 more distant States and the District of Columbia. Among the 47 out-migrant dentists who still maintain a license in Massachusetts, approximately three out of every five reported leaving the State after 1960. Although this proportion appears high, it is probably overstated because dentists who moved from the State in recent years are more likely to renew their license than dentists who have been out of Massachusetts for a longer period of time.

June 1967.

Appendix Table A.--Summary Statistics for Massachusetts

	Number of dentists
All licensed dentists	3,953
Respondents -- total dentists participating in survey	3,620
(number not reporting current location or military status - 2)	
Civilian dentists in Massachusetts[1] -- civilian respondents designated simply as "dentists" in text tables	3,159
(number not reporting: age - 26, principal current employment - 6)	
Professionally active dentists[2]	3,047
Dental practitioners[3]	2,959
In limited practice[4]	354
Located in Massachusetts last year:	
Reported professional activity[5]	2,689
Dentists providing patient care[6]	2,605
Reported time spent in patient care[7]	2,101
Dentists in private practice[8]	2,485
Reported time spent in practice[9]	1,978
Out-of-State dentists -- civilian respondents not located in Massachusetts	327
Dentists on active duty in Armed Forces	132
Nonrespondents -- licensed dentists not participating in survey	333

1/ All responding dentists who currently work in Massachusetts (excluding those in the Armed Forces) or who are retired and currently live in the State.

2/ All active civilian dentists currently in Massachusetts -- excludes 92 dentists who are fully retired, 14 who are engaged principally in a non-dental activity, and 6 who did not report their principal current activity.

3/ All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

4/ Dentists who reported they limited their practice to a dental specialty.

5/ Dentists located in Massachusetts last year who indicated type(s) of activity in which they engaged.

6/ All dentists who engaged in patient care last year, either as a primary or secondary activity.

7/ Dentists reporting both hours and weeks spent in patient care last year.

8/ Dentists who reported they were primarily self-employed both currently and last year.

9/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.

Appendix Table B.--Selected Data for Massachusetts Counties

County	Professionally active dentists	Population (000)[1/]	Persons per active dentist	Percent of active dentists		
				By age		Using auxiliaries
				Under 40 years	55 years and over	
Total	3,047	5,380.6	1,766	32	32	63
Barnstable	50	81.6	1,632	24	47	43
Berkshire	76	146.0	1,921	14	28	66
Bristol	156	410.4	2,631	23	22	70
Dukes	2	5.8	2,900	-	-	50
Essex	344	596.7	1,735	34	33	66
Franklin	34	55.6	1,635	32	21	61
Hampden	230	457.5	1,989	32	25	71
Hampshire	42	109.5	2,607	29	43	45
Middlesex	689	1,319.8	1,916	38	28	64
Nantucket	2	3.6	1,800	-	50	-
Norfolk	362	567.2	1,567	37	24	68
Plymouth	147	278.8	1,897	47	27	65
Suffolk	612	745.8	1,219	24	46	53
Worcester	301	602.3	2,001	28	38	64

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DENTISTS LICENSED IN MICHIGAN

During the 1965 registration period, 5,010 dentists registered with the Michigan State Board of Dentistry. Eighty-one percent of these dentists are civilians located in Michigan, another 14 percent are civilians located in other states, and 5 percent are on active duty with the Armed Forces.

Survey questionnaires were completed by 4,860 dentists, 97 percent of all those registered. For nonrespondents, data as to location, age, dental school attended, and year of graduation has been obtained, where possible, from records of the Michigan State Board of Dentistry or from the 1966 American Dental Directory, published by the American Dental Association.

Location and Military Status of Dentists
Licensed in Michigan

Location and military status	All dentists	Percent of dentists
Total licensed	5,010	100
Respondents	4,860	97
Nonrespondents	150	3
Total licensed	5,010	100
Civilians in Michigan	4,039	81
Respondents	3,938	-
Nonrespondents	101	-
Civilians in another state	712	14
On active duty with Armed Forces	257	5
Not reported	2	*

* Less than one-half of one percent.

About one-fourth of all survey respondents hold a license to practice dentistry in one or more other states. Only 13 percent of the dentists located in Michigan hold more than one license, with 11 percent licensed in one other state and a mere 2 percent licensed in two or more other states. Multiple licensure is much more common among dentists registering in Michigan but located out of State; 21 percent hold two or more licenses in addition to their Michigan license.

DENTAL SCHOOL ATTENDED

The great majority of Michigan's dentists--8 of every 10--have graduated from one of the two in-state dental schools. The University of Michigan, the major contributor, has supplied almost 2,100 dentists, or more than half the total dental force. The University of Detroit, even though its contribution is considerably smaller, has nevertheless trained more than one-fourth of the dentists. In addition, 15 schools in other North Central States have together trained 14 percent of Michigan's dentists. Among these schools, Marquette, Northwestern, and Loyola Universities have been the largest contributors, providing a total of about 400 dentists, or 10 percent of the Michigan dental force.

Dental School Attended and Year of Graduation for Dentists in Michigan

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	4,039 1/	-	1,097	1,445	1,404
		(Percent distribution by school)			
Schools in Michigan	3,216	80	88	81	74
University of Michigan	2,084	52	45	45	65
University of Detroit	1,132	28	43	36	9
Schools in other North Central States	573	14	9	12	21
Marquette University	163	4	3	3	7
Northwestern University	124	3	1	3	5
Loyola University of Chicago	111	3	2	3	4
12 other schools	175	4	3	3	5
28 schools located elsewhere	215	6	3	7	5

1/ Dental school attended not available for 35 dentists and year of graduation for 93 dentists.

The proportionate contribution of in-state dental schools to the Michigan dentist supply has increased somewhat in recent years. These two schools have provided almost 90 percent of the dentists in the State who graduated since 1955, compared to 74 percent of those who completed their dental education prior to World War II. At the same time, the contribution of other schools in the North Central States has declined considerably.

The University of Detroit has contributed substantially to the Michigan dentist supply since its establishment in the mid-1930's. Since that time there has been some decrease in the relative contribution of the University of Michigan. As a result, the contributions of the two schools have become approximately equal in recent years--43 percent and 45 percent, respectively, among dentists who graduated after 1955.

DISTRIBUTION OF DENTISTS

More than eight in ten of the 4,039 dentists in Michigan are located in the 11 metropolitan areas of the State. The 3-county Detroit area alone has 2,125 dentists, over half of the total dental force. While a substantial majority of these dentists (1,511) are in Wayne County, where Detroit is located, the other two counties in the area (Oakland and Macomb) also have a sizable number of dentists, 419 and 195, respectively. The Grand Rapids metropolitan area has the second largest dental force, but comprises only 7 percent of the State supply. The next largest dental forces are found in the Flint area, which has 5 percent of the dentists, and in the Ann Arbor and Lansing areas, which have 4 percent each. The areas of Kalamazoo, Saginaw, Muskegon, and Jackson each account for approximately 2 percent of the State's dentists. The remaining two metropolitan areas--Bay City and the Michigan portion of the interstate Toledo area (Monroe County)--each have about one percent of the total supply.

Distribution of Michigan Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	83	4,039	100
Metropolitan areas	17	3,287	81
Detroit area	3	2,125	52
Grand Rapids area	2	267	7
Flint area	2	185	5
Ann Arbor area	1	177	4
Lansing area	3	160	4
6 other areas	6	373	9
Nonmetropolitan counties	66	752	19
Central city 10,000-49,999	15	380	10
Central city 5,000 - 9,999	16	195	5
Central city - under 5,000	35	177	4

* See Appendix Table for complete listing and definition of metropolitan areas and presentation of individual county data.

Only 19 percent of Michigan's dentists are located in the 66 nonmetropolitan counties of the State. One-half of these dentists are located in the 15 counties with central cities of 10,000 or more persons. Two of these counties--Calhoun and Berrien--have more than 60 dentists, and three--St. Clair, Midland, and Lenawee--have at least 30 dentists. Only three of the counties in this group have fewer than 10 dentists. The 51 counties with less than 10,000 persons in their central cities have 9 percent of the dentist supply. Only 12 of these counties have more than 10 dentists, while 18 have fewer than 5 dentists.

AGE OF DENTISTS AND DIFFERENCES IN AGE BY AREA

With slightly more than one-half of the dentists under 45 years of age, the median age of dentists in Michigan is 44.3 years. Over one-third of the State's dentists are under 40 years of age, including 20 percent who are under 35. On the other hand, 30 percent are 55 years of age or older. Over 500 dentists, 13 percent of the total, are 65 or over, including 224 who have reached the age of 70.

Age Distribution of Michigan Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	4,039 1/	100	-
Under 30	238	6	6
30 - 34	568	14	20
35 - 39	606	15	35
40 - 44	647	16	51
45 - 49	389	10	61
50 - 54	301	8	69
55 - 59	351	9	78
60 - 64	336	9	87
65 - 69	282	7	94
70 & over	224	6	100

1/ Age not available for 97 dentists. Percents based on total for whom age is known.

The median age of dentists in metropolitan areas is 44.0 years, more than two years younger than the median of 46.3 years for dentists in the non-metropolitan counties. Median ages vary considerably among the metropolitan areas. The areas of Lansing and Ann Arbor have the youngest dentists, with median ages of 42.2 and 42.7 years, respectively, while the oldest dentists are found in the Bay City area, where the median age is 46.3 years. The Kalamazoo and Grand Rapids areas have the next oldest dentists, with median ages of approximately 45 years. In the Detroit area, the median age is 44.2 years, approximately equal to the State average.

Age differences among the counties in the Detroit area are quite pronounced, with older dentists concentrated in Wayne County, the hub of the area. The median age of dentists in this county is 46.4 years, while dentists in Oakland County average about 4 years younger, with a median age of 42.2 years, and those located in Macomb County have a still lower median age of 38.4 years.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 4,039 licensed dentists in Michigan, 3,897, or 96 percent, are active in their profession, giving Michigan one professionally active dentist for every 2,120 persons. There is one dentist for every 1,992 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of one dentist for every 2,681 persons.

Number of Persons per Active Dentist in Michigan

County group*	Professionally active dentists	Population	Persons per dentist
All counties	3,897	8,259,700	2,120
Metropolitan areas	3,178	6,332,100	1,992
Detroit area	2,054	3,969,900	1,933
Grand Rapids area	259	493,400	1,905
Flint area	181	456,100	2,520
Ann Arbor area	169	190,000	1,124
Lansing area	155	323,700	2,088
6 other areas	360	899,000	2,497
Nonmetropolitan counties	719	1,927,600	2,681
Central city 10,000-49,999	370	909,700	2,459
Central city 5,000- 9,999	182	505,500	2,777
Central city - under 5,000	167	512,400	3,068

* See Appendix Table for data pertaining to individual metropolitan areas and counties.

The 3-county Detroit metropolitan area has a persons-per-dentist ratio of 1,933. Both Wayne County, the hub of the area, and Oakland County have ratios of approximately 1,860, while Macomb County has a somewhat less favorable ratio of 2,600. The best ratio in the State, 1,124 persons per dentist, is found in the Ann Arbor area, where the University of Michigan School of Dentistry is located. Among the other metropolitan areas, three have ratios more favorable than the State average--Grand Rapids, Kalamazoo, and Lansing. Two metropolitan areas--Jackson and Saginaw--have persons-per-dentist ratios between 2,200 and 2,500, and three areas--Flint, Muskegon, and Bay City--have ratios between 2,500 and 2,900. The remaining area, Monroe County, an outlying county in the Toledo metropolitan area, has a persons-per-dentist ratio exceeding 4,500.

Of the 66 nonmetropolitan counties of the State, 15 have persons-per-dentist ratios under 2,000. Yet there are 30 counties with ratios of more than 3,000, including 15 with ratios in excess of 4,000 persons per dentist, and 3 counties that have no dentists, according to available information. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The group of counties with central cities of 10,000 or more inhabitants have an average ratio of 2,459, while counties with central cities of less than 5,000 population average over 3,000 persons per dentist.

UTILIZATION OF AUXILIARIES

More than eight out of ten dental practitioners in Michigan (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel, including 71 percent who employ at least one auxiliary on a full-time basis. The most frequently employed auxiliary is the dental assistant. Three-fourths of the practitioners reported the use of an assistant, including 64 percent who utilize at least one full time. About one-fourth of the dentists employ secretaries or receptionists, usually on a full-time basis. Only 19 percent employ dental hygienists, and 7 percent employ dental laboratory technicians, usually only part time.

Michigan Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners: Total	With one full-time employee (or more)	With only part-time employees
Total	3,743 1/	100	71	11
One or more auxiliaries	3,016	82	71	11
Assistant	2,729	75	64	11
Hygienist	701	19	7	12
Laboratory technician	245	7	2	5
Secretary or receptionist	879	24	15	9
Other type of personnel	85	2	1	1
No auxiliary	643	18	-	-

1/ Includes 84 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist and tends to be more common among younger dentists. Ninety percent of Michigan dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 80 percent among dentists 45 to 64 years old and to only 52 percent among dentists 65 and over. Young dentists who are just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age, and of hygienists, until age 35.

Some 18 percent of the dental practitioners in Michigan reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, 34 percent indicated a need for full-time hygienists, and 24 percent reported vacancies for full-time dental assistants.

OTHER SURVEY FINDINGS

☐ One of every six survey respondents, 632 dentists, reported that they had completed one year or more of advanced training since receiving the dental degree. Of 499 dentists with advanced academic training, 329 reported having a master's or other advanced degree, and another 170 dentists received no additional degrees but completed one or more years of postgraduate study. Among the 246 dentists reporting advanced clinical training, 130 had completed an internship and 116 a residency. There were 113 dentists who had completed at least a year of both academic and clinical training.

☐ Ninety-five percent of the responding professionally active dentists in Michigan are primarily engaged in private practice, with 94 percent self-employed and one percent employed by another dentist. Two percent are on the staffs of dental schools, another one percent are employed by governmental agencies, and the remaining two percent are engaged in other dental activities, such as taking advanced training.

☐ At least one part-time dental activity in addition to their principal employment was reported by 9 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other secondary activities were reported, such as part-time employment by a governmental agency, employment in the private practice of another dentist, and assistance to a voluntary agency.

☐ Dentists reporting time spent in patient care devoted an average of 39.6 hours per week to this activity for 47.2 weeks during the year preceding the survey. About one dentist in eight worked the equivalent of 6 days a week, 48 hours or more, for at least 48 weeks.

☐ About 11 percent of the dentists in Michigan reported that they limit their practice to a dental specialty, primarily orthodontics or oral surgery. Dental specialists are more likely to be located in a metropolitan area than in a nonmetropolitan county. While one in every nine dentists practicing in a metropolitan area limits his practice, in nonmetropolitan counties only one in every 17 dentists does so.

☐ Of the 712 dentists licensed in Michigan but located out of State, approximately 22 percent are located in the neighboring states of Ohio, Illinois, Wisconsin, and Indiana. The remaining out-of-state dentists are scattered throughout 43 other states, with the largest numbers in California and Florida.

April 1968.

APPENDIX TABLE

Selected Data on Dentists in Michigan, by Location

County group and county	Civilian dentists: Total	Civilian dentists: Respond-ents	Civilian dentists: Non-respond-ents	Civilian dentists: Age in 1965: Percent under 35	Civilian dentists: Age in 1965: Percent 55 & over	Civilian dentists: Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
All counties	4,039	3,938	101	20	30	3,897	8,259.7	2,120
Metropolitan areas 2/	3,287	3,199	88	20	29	3,178	6,332.1	1,992
Detroit area	2,125	2,062	63	20	30	2,054	3,969.9	1,933
Macomb	195	191	4	34	13	192	502.7	2,618
Oakland	419	407	12	23	20	407	758.7	1,864
Wayne	1,511	1,464	47	18	35	1,455	2,708.5	1,862
Grand Rapids area	267	260	7	19	30	259	493.4	1,905
Kent	222	216	6	18	32	214	387.0	1,808
Ottawa	45	44	1	26	19	45	106.4	2,364
Flint area	185	184	1	24	29	181	456.1	2,520
Genesee	171	171	-	25	29	167	412.0	2,467
Lapeer	14	13	1	14	29	14	44.1	3,150
Lansing area	160	157	3	23	23	155	323.7	2,088
Clinton	9	9	-	22	33	9	43.2	4,800
Eaton	22	22	-	32	27	20	53.2	2,660
Ingham	129	126	3	21	21	126	227.3	1,804
Saginaw area	87	84	3	18	28	83	200.3	2,413
Saginaw	87	84	3	18	28	83	200.3	2,413
Ann Arbor area	177	172	5	25	23	169	190.0	1,124
Washtenaw	177	172	5	25	23	169	190.0	1,124

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Michigan, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Percent under 35	Percent 55 & over			
Metropolitan areas 2/ (cont'd.)								
Kalamazoo area	97	94	3	20	27	92	180.2	1,959
Kalamazoo	97	94	3	20	27	92	180.2	1,959
Muskegon-Muskegon Heights area	64	64	-	15	23	63	160.3	2,544
Muskegon	64	64	-	15	23	63	160.3	2,544
Jackson area	61	60	1	20	29	60	137.4	2,290
Jackson	61	60	1	20	29	60	137.4	2,290
Bay City area	40	38	2	21	44	39	111.0	2,846
Bay	40	38	2	21	44	39	111.0	2,846
Toledo area (Mich. part)	24	24	-	13	22	23	109.8	4,774
Monroe	24	24	-	13	22	23	109.8	4,774
Nonmetropolitan counties 3/	752	739	13	20	36	719	1,927.6	2,681
Central city 25,000-49,999	142	138	4	21	31	138	314.8	2,281
Calhoun	65	62	3	23	37	63	147.0	2,333
Midland	33	32	1	27	27	32	56.4	1,763
St. Clair	44	44	-	14	26	43	111.4	2,591
Central city 10,000-24,999	238	235	3	18	31	232	594.9	2,564
Alpena	14	14	-	31	31	13	30.0	2,308
Berrien	64	64	-	16	25	64	160.2	2,503

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Michigan, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Percent under 35	Percent 55 & over			
Nonmetropolitan counties 3/ (cont'd.)								
Central city 10,000-24,999 (cont'd.)								
Chippewa	12	12	-	9	36	12	36.7	3,058
Delta	14	14	-	29	29	14	34.6	2,471
Gogebic	6	5	1	17	67	6	23.0	3,833
Grand Traverse	22	21	1	9	41	22	35.8	1,627
Isabella	13	13	-	31	54	12	36.5	3,042
Lenawee	34	34	-	12	29	31	78.0	2,516
Marquette	26	25	1	19	35	26	61.0	2,346
Menominee	3	3	-	67	33	3	24.4	8,133
Shiawassee	22	22	-	29	19	21	56.0	2,667
Wexford	8	8	-	-	25	8	18.7	2,338
Central city 5,000-9,999	195	193	2	24	37	182	505.5	2,777
Barry	8	8	-	50	25	8	30.0	3,750
Branch	15	14	1	13	40	12	35.3	2,942
Cass	8	8	-	43	43	7	38.2	5,457
Cheboygan	6	6	-	-	67	5	14.2	2,840
Dickinson	12	12	-	-	50	12	24.3	2,025
Emmet	10	10	-	40	30	9	16.1	1,789
Gratiot	11	11	-	18	9	10	38.0	3,800
Hillsdale	8	8	-	25	63	8	34.2	4,275
Houghton	10	9	1	13	50	10	34.6	3,460
Ionia	19	19	-	6	33	17	44.6	2,624
Manistee	13	13	-	38	23	13	19.5	1,500
Mason	12	12	-	27	36	12	22.0	1,833

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Michigan, by Location

	Civilian dentists							
				Age in 1965				
	Total	Respond-ents	Non-respond-ents	Percent under 35	Percent 55 & over	Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
Nonmetropolitan counties 3/ (cont'd.)								
Central city 5,000-9,999 (cont'd.)								
Mecosta	8	8	-	38	-	8	21.9	2,738
Montcalm	15	15	-	43	50	14	38.0	2,714
St. Joseph	20	20	-	20	50	18	43.0	2,389
Van Buren	20	20	-	30	30	19	51.6	2,716
Central city 2,500-4,999	108	105	3	19	43	103	292.5	2,840
Alger	2	2	-	-	50	2	9.0	4,500
Allegan	14	13	1	21	29	14	58.4	4,171
Charlevoix	9	9	-	22	33	8	14.1	1,763
Huron	14	14	-	21	43	11	34.5	3,136
Iron	10	10	-	20	50	10	16.8	1,680
Livingston	18	17	1	22	50	17	41.1	2,418
Luce	4	4	-	25	50	4	7.5	1,875
Mackinac	6	6	-	-	33	6	11.1	1,850
Newaygo	7	7	-	29	29	7	25.4	3,629
Otsego	7	6	1	29	57	7	8.6	1,229
Presque Isle	3	3	-	-	67	3	13.2	4,400
Schoolcraft	5	5	-	20	80	5	8.4	1,680
Tuscola	9	9	-	-	25	9	44.4	4,933
Central city - under 2,500	69	68	1	16	43	64	219.9	3,436
Alcona	2	2	-	-	100	1	6.2	6,200
Antrim	7	7	-	-	57	6	10.5	1,750
Arenac	4	4	-	50	50	4	9.6	2,400
Baraga	2	2	-	-	-	2	7.3	3,650

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Michigan, by Location

	Civilian dentists							
				Age in 1965				
	Total	Respond-ents	Non-respond-ents	Percent under 35	Percent 55 & over	Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
Nonmetropolitan counties 3/ (cont'd.)								
Central city - under 2,500 (cont'd.)								
Benzie	6	6	-	-	83	6	7.9	1,317
Clare	5	5	-	20	40	5	12.5	2,500
Crawford	3	3	-	-	33	3	5.4	1,800
Gladwin	2	2	-	-	100	2	10.5	5,250
Iosco	7	7	-	29	43	7	22.3	3,186
Kalkaska	-	-	-	-	-	-	4.4	-
Keweenaw	-	-	-	-	-	-	2.4	-
Lake	-	-	-	-	-	-	5.3	-
Leelanau	2	2	-	50	-	2	9.8	4,900
Missaukee	1	1	-	-	-	1	6.4	6,400
Montmorency	1	1	-	100	-	1	4.3	4,300
Oceana	6	6	-	17	17	6	16.6	2,767
Ogemaw	2	2	-	-	50	1	9.3	9,300
Ontonagon	2	2	-	-	-	2	11.1	5,550
Osceola	5	4	1	20	40	4	13.7	3,425
Oscoda	3	3	-	33	67	3	3.7	1,233
Roscommon	3	3	-	-	100	2	7.5	3,750
Sanilac	6	6	-	17	17	6	33.2	5,533

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2/ Michigan counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For the interstate Toledo SMSA, statistics are presented only for dentists located in the Michigan portion.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN MINNESOTA

During the 1966 registration period, 3,594 dentists registered with the Minnesota Board of Dental Examiners. A total of 3,243 dentists responded to the survey, 90 percent of all those registered. Slightly more than two-thirds of the responding dentists are civilians located in Minnesota, 25 percent are civilians located in other States, and 6 percent are on active duty with the Armed Forces. There were 36 women dentists included among the respondents, 23 of them located within the State.

Location and Military Status of Dentists
Licensed in Minnesota

Location and military status	All dentists	Percent of dentists
Total licensed	3,594	100
Respondents	3,243	90
Nonrespondents	351	10
Respondents	3,243	100
Civilians in Minnesota	2,221	69
Civilians in another State	815	25
On active duty with Armed Forces	196	6
Not reported	11	*

* Less than one-half of one percent.

About 37 percent of the respondents hold licenses to practice dentistry in one or more other States. Only 15 percent of the dentists located in Minnesota have more than one license, with 13 percent licensed in one other State and a mere 2 percent licensed in two or more other States. The proportion of responding out-of-State dentists holding multiple licenses is considerably greater; approximately 23 percent hold two or more licenses in addition to their Minnesota license.

Over one-third (36 percent) of the licenses held outside of Minnesota were issued by adjacent States, including 12 percent in Wisconsin, 10 percent in North Dakota, 8 percent in South Dakota, and 6 percent in Iowa. Another 14 percent of the out-of-State licenses are maintained in California, and the remainder are held in 43 other States and the District of Columbia.

PROFESSIONAL TRAINING

Almost nine in every ten of Minnesota's 2,221 responding dentists graduated from the University of Minnesota School of Dentistry. Nearly all of the remainder graduated from 14 schools in other North Central States, including 3 percent from Marquette University, 2 percent each from Northwestern and Creighton Universities, and 1 percent from Loyola University of Chicago. Only 19 dentists are graduates of schools located in more distant States.

Dental School Attended and Year of Graduation
for Dentists in Minnesota

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	2,221	-	540	605	1,073
		(Percent distribution by school)			
University of Minnesota	1,951	88	87	92	86
Schools in other North Central States	250	11	12	7	13
Marquette University	69	3	5	3	2
Northwestern University	41	2	*	*	3
Creighton University	40	2	1	1	3
Loyola University (Chicago)	31	1	1	1	2
10 other schools	69	3	5	2	3
11 schools in other States	19	1	1	1	1

1/ Dental school attended not available for 1 dentist and year of graduation for 3 dentists. Percents based on known totals.

* Less than one-half of one percent.

About one-fourth (24 percent) of the State's dentists have graduated from dental school since 1955. In contrast, almost half (49 percent) received their dental degrees prior to World War II. Over the years, Minnesota's own dental school has consistently contributed the vast majority of the State's dentists.

Approximately 14 percent of the survey respondents, 306 dentists, reported that they had completed one or more years of advanced training after receiving the dental degree. Of 230 dentists with advanced academic training, 143 received a master's or other advanced degree, while another 87 received no additional degrees but completed one or more years of advanced work at the postgraduate level. Of the 133 dentists with advanced clinical training, 89 had completed an internship, and 44, a residency. There are 57 dentists who have taken both academic and clinical training.

DISTRIBUTION OF DENTISTS

Three-fifths of the 2,221 responding dentists in Minnesota are located in the three metropolitan areas of the State. The 5-county Minneapolis-St. Paul area alone has 1,176 dentists, 53 percent of the State supply. More than nine-tenths of these dentists are concentrated in Hennepin and Ramsey Counties, where the twin cities of Minneapolis and St. Paul are located. Another 6 percent of the State's dental force, 127 dentists, are located in the Duluth area (St. Louis County), while the remaining 1 percent are found in the Moorhead area (Clay County).

Distribution of Minnesota Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	87	2,221	100
Metropolitan areas	7	1,324	60
Minneapolis-St. Paul area	5	1,176	53
Duluth area	1	127	6
Moorhead area	1	21	1
Nonmetropolitan counties	80	897	40
Central city 10,000-49,999	13	369	16
Central city 5,000-9,999	19	220	10
Central city 2,500-4,999	23	169	8
Central city under 2,500	25	139	6

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Forty percent (897) of the responding dentists are located in the 80 nonmetropolitan counties of the State. The 13 counties with central cities of 10,000 or more persons have 369 dentists, about one-sixth of the total dental force. Two of these counties--Olmsted and Stearns--have more than 40 dentists each, while nine other counties have at least 20 dentists each. The 67 counties with central city populations under 10,000 have one-fourth (528) of the State's supply of dentists. Among these 67 counties, 19 have 10 or more dentists each, yet 15 have fewer than five dentists.

AGE OF DENTISTS

The median age of dentists in Minnesota is 49.4 years. Three of every ten dentists (673) are under 40 years of age, and an almost equal proportion, 29 percent, are between 40 and 54 years of age. On the other hand, a substantial portion, more than two-fifths, are 55 or over. About one-fourth of the dentists (522) are at least 65 years of age, including 280 who have reached the age of 70.

Age Distribution of Minnesota Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent
Total	2,221 1/	100	-
Under 30	162	7	7
30 - 34	307	14	21
35 - 39	204	9	30
40 - 44	278	13	43
45 - 49	175	8	51
50 - 54	180	8	59
55 - 59	178	8	67
60 - 64	206	9	76
65 - 69	242	11	87
70 - 74	172	8	95
75 & over	108	5	100

1/ Age not available for 9 dentists. Percents based on total for whom age is known.

Dentists in the metropolitan areas, with a median age of 49.0 years, are only slightly younger than dentists in the nonmetropolitan counties, where the median age is 50.2 years. Median ages of dentists in the Minneapolis-St. Paul and Duluth metropolitan areas are quite similar, about 49 years, while the youngest group, with a median age of 40 years, is found in the Moorhead area.

Median ages of dentists in nonmetropolitan counties tend to increase as the size of the central city decreases. The median age of dentists in counties with central cities of at least 10,000 population is 48.8 years, compared to 51.9 years in counties with central cities of less than 2,500 inhabitants.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 2,221 responding dentists in Minnesota, 93 percent (2,068 dentists) are active in their profession, giving the State one professionally active dentist for every 1,741 persons. In the metropolitan areas, there are 1,532 persons per dentist, while the nonmetropolitan counties have a somewhat higher ratio of 2,051.

Number of Persons per Active Dentist in Minnesota

County group*	Professionally active dentists	Population	Persons per dentist
All counties	2,068	3,600,500	1,741
Metropolitan areas	1,234	1,890,000	1,532
Minneapolis-St. Paul area	1,090	1,609,600	1,477
Duluth area	123	238,300	1,937
Moorhead area	21	42,100	2,005
Nonmetropolitan counties	834	1,710,500	2,051
Central city 10,000-49,999	341	579,200	1,698
Central city 5,000-9,999	212	447,300	2,110
Central city 2,500-4,999	158	369,900	2,341
Central city under 2,500	123	314,100	2,554

* See Appendix Table for individual county data.

Among the metropolitan areas, the 5-county Minneapolis-St. Paul area has the best ratio with 1,477 persons per dentist. Hennepin County itself, where Minneapolis is located, has an even more favorable ratio of 1,287, compared to 1,491 persons per dentist for Ramsey County (St. Paul) and to a combined ratio of 2,755 in the other three counties in the area. The Duluth area has a ratio of 1,937, slightly higher than the State average, while the Moorhead area has the least favorable of the metropolitan ratios.

Of the 80 nonmetropolitan counties, 24 have persons-per-dentist ratios under 2,000, yet 12 counties have ratios of 3,000 or more persons for every dentist. Generally, persons-per-dentist ratios become less favorable as the size of the central city decreases. Counties with 10,000 or more inhabitants in their central cities have an average of 1,698 persons per dentist, while counties with central cities under 2,500 average one active dentist for every 2,554 persons.

UTILIZATION OF AUXILIARIES

Almost 8 of every 10 practitioners in Minnesota (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 71 percent of the dentists, including 62 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 25 percent of the dentists, half of whom employ at least one full time. Dental hygienists are employed by 17 percent of the practitioners, and laboratory technicians by 3 percent. The majority of dentists who employ hygienists or technicians do so only part time.

Minnesota Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	2,033 1/	100	68	10
One or more auxiliaries	1,522	78	68	10
Assistant	1,394	71	62	9
Hygienist	324	17	6	11
Laboratory technician	68	3	1	2
Secretary or receptionist	497	25	12	13
Other type of personnel	64	3	1	2
No auxiliary	435	22	-	-

1/ Includes 76 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and tends to be more common among younger dentists. Approximately 90 percent of the practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 77 percent among dentists 45 to 64 years of age and to 49 percent among dentists 65 or over.

Although dentists in metropolitan areas are no more likely to employ auxiliary personnel than those in nonmetropolitan counties, the utilization of hygienists is much more common in metropolitan areas than in the remainder of the State. About 21 percent of the dentists in metropolitan areas report the employment of a hygienist, compared to only 9 percent of the dentists located elsewhere.

OTHER SURVEY FINDINGS

☐ Ninety-six percent of the professionally active dentists in Minnesota are primarily engaged in private practice, with 93 percent self-employed and 3 percent employed by another dentist. The remaining 4 percent are either on the staff of the dental school, employed by a governmental agency, or engaged in other dental activities, such as taking advanced training.

☐ At least one part-time dental activity in addition to their principal employment was reported by 10 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other dental activities were reported, such as part-time employment by State or local government, employment in the private practice of another dentist, and assistance to voluntary agencies.

☐ Dentists providing patient care in the year prior to the survey devoted an average of 39.7 hours per week to this activity for 47.1 weeks during the year. About one dentist in eight worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ About 8 percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics, followed by oral surgery, and pedodontics. About one in every ten dentists in metropolitan areas limits his practice as compared to one in every 25 in nonmetropolitan counties.

☐ Twenty-nine percent of the 815 responding dentists licensed in Minnesota but located in another State are in the four adjacent States, primarily North Dakota and Wisconsin. Another 19 percent of the out-of-State dentists are located in California, while the remainder are scattered throughout 38 other States, the District of Columbia, Puerto Rico, and foreign countries.

December 1968.

APPENDIX TABLE

Selected Data on Dentists in Minnesota, By Location

County group and county	Civilian dentists			Professionally active	Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965				
		Under 40	55 years or more			
All counties	2,221	673	906	2,068	3,600.5	1,741
Metropolitan areas 2/	1,324	399	526	1,234	1,890.0	1,532
Minneapolis-St. Paul area	1,176	348	468	1,090	1,609.6	1,477
Anoka	42	25	4	42	110.6	2,633
Dakota	38	18	6	38	98.8	2,600
Hennepin	753	211	309	694	892.9	1,287
Ramsey	322	88	144	296	441.2	1,491
Washington	21	6	5	20	66.1	3,305
Duluth area 3/	127	41	54	123	238.3	1,937
St. Louis	127	41	54	123	238.3	1,937
Moorhead area 4/	21	10	4	21	42.1	2,005
Clay	21	10	4	21	42.1	2,005
Nonmetropolitan counties 5/	897	274	380	834	1,710.5	2,051
Central city 25,000-49,999	146	51	53	138	206.7	1,498
Mower	31	6	11	31	49.6	1,600
Olmsted	67	31	21	64	70.0	1,094
Stearns	48	14	21	43	87.1	2,026

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Minnesota, By Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965 Under 40	Age in 1965 55 years or more	Profes- sionally active		
Nonmetropolitan counties 5/ (cont'd.)						
Central city 10,000-24,999	223	65	93	203	372.5	1,835
Blue Earth	36	10	14	34	45.8	1,347
Brown	20	7	8	17	28.9	1,700
Crow Wing	20	7	7	19	33.1	1,742
Freeborn	15	3	6	15	39.4	2,627
Goodhue	22	6	11	22	33.7	1,532
Kandiyohi	21	8	6	15	30.9	2,060
Otter Tail	21	4	10	18	50.2	2,789
Rice	28	9	14	25	40.5	1,620
Steele	17	6	6	16	27.1	1,694
Winona	23	5	11	22	42.9	1,950
Central city 5,000-9,999	220	65	95	212	447.3	2,110
Becker	12	3	7	11	23.8	2,164
Beltrami	11	4	4	11	24.1	2,191
Carlton	13	6	4	13	29.1	2,238
Chippewa	6	1	4	6	16.4	2,733
Douglas	14	4	6	13	22.1	1,700
Itasca	17	2	7	16	37.7	2,356
Koochiching	7	-	3	7	17.8	2,543
Lyon	13	4	7	13	23.1	1,777
McLeod	17	6	8	16	25.6	1,600
Martin	14	2	10	14	26.8	1,914
Meeker	9	2	3	8	19.4	2,425
Morrison	12	6	3	11	27.7	2,518

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Minnesota, By Location

County group and county	Civilian dentists				Population [1/] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or more			
Nonmetropolitan counties [5/] (cont'd.)						
Central city 5,000-9,999 (cont'd.)						
Nicollet	11	2	6	11	23.4	2,127
Nobles	9	-	4	9	23.7	2,633
Pennington	8	3	4	8	12.5	1,563
Pipestone	9	2	3	9	13.7	1,522
Polk	15	6	5	13	37.6	2,892
Scott	15	8	4	15	26.1	1,740
Waseca	8	4	3	8	16.7	2,088
Central city 2,500-4,999	169	46	75	158	369.9	2,341
Benton	5	2	2	4	18.1	4,525
Big Stone	5	-	3	4	9.2	2,300
Carver	14	6	7	11	23.9	2,173
Cottonwood	8	3	2	8	15.5	1,938
Faribault	11	2	8	11	23.7	2,155
Fillmore	14	1	8	13	23.3	1,792
Houston	7	3	3	7	17.1	2,443
Hubbard	4	1	1	4	9.8	2,450
Isanti	7	2	4	7	14.1	2,014
Jackson	8	3	4	8	15.0	1,875
Lake	7	1	2	6	15.4	2,567
LeSueur	13	3	7	10	20.3	2,030
Pope	6	1	4	6	12.1	2,017
Redwood	9	-	4	9	21.4	2,378
Rock	5	1	1	5	11.8	2,360
Sherburne	5	3	2	4	14.1	3,525

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Minnesota, By Location

County group and county	Civilian dentists				Population [1] (in 000's)	Persons per active dentist
	Total	Age in 1965 Under 40	Age in 1965 55 years or more	Professionally active		
Nonmetropolitan counties [5] (cont'd.)						
Central city 2,500-4,999 (cont'd.)						
Stevens	6	2	1	6	11.6	1,933
Swift	6	1	3	6	14.8	2,467
Todd	9	3	2	9	23.4	2,600
Wabasha	7	3	2	7	17.5	2,500
Wadena	4	-	3	4	12.4	3,100
Watonwan	5	4	1	5	14.6	2,920
Wilkin	4	1	1	4	10.8	2,700
Central city under 2,500	139	47	64	123	314.1	2,554
Aitkin	4	2	2	4	12.0	3,000
Cass	5	-	5	5	16.6	3,320
Chisago	8	4	3	7	13.8	1,971
Clearwater	4	2	2	3	8.6	2,867
Cook	1	-	1	1	3.6	3,600
Dodge	4	1	2	3	13.9	4,633
Grant	5	1	3	5	8.9	1,780
Kanabec	5	3	2	3	9.4	3,133
Kittson	4	2	1	4	8.1	2,025
Lac Qui Parle	6	2	4	5	13.6	2,720
Lake of the Woods	2	1	1	1	4.2	4,200
Lincoln	4	2	-	4	9.6	2,400
Mahnomen	1	-	-	1	6.6	6,600
Marshall	5	1	2	5	14.2	2,840
Mille Lacs	9	4	4	5	15.0	1,875
Murray	4	2	2	3	14.6	4,867

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Minnesota, By Location

County group and county	Civilian dentists				Population [1] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or more			
Nonmetropolitan counties [5] (cont'd.)						
Central city under 2,500 (cont'd.)						
Norman	4	1	1	4	11.0	2,750
Pine	6	4	1	6	17.2	2,867
Red Lake	2	-	1	2	5.7	2,850
Renville	10	1	6	10	23.7	2,370
Roseau	5	1	2	3	12.0	4,000
Sibley	7	3	3	7	16.2	2,314
Traverse	3	1	2	3	7.4	2,467
Wright	18	4	7	16	32.7	2,044
Yellow Medicine	13	5	7	10	15.5	1,550

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2/ Minnesota counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists located in the Minnesota portion of the SMSA.

3/ Minnesota part of the Duluth-Superior SMSA.

4/ Minnesota part of the Fargo-Moorhead SMSA.

5/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN MISSISSIPPI

During the 1967 registration period, 886 dentists registered with the Mississippi State Board of Dental Examiners. Sixty-two percent of the registered dentists were civilians located in Mississippi, 32 percent were civilians located in other States, and 6 percent were on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Mississippi

Location and military status	All dentists	Percent of dentists
Total licensed	886	100
Respondents	846	95
Nonrespondents	40	5
Total licensed	886	100
Civilians in Mississippi	551	62
Respondents	513	-
Nonrespondents	38	-
Civilians in another State	281	32
On active duty with Armed Forces	54	6

The survey questionnaire was completed by 846 dentists, 95 percent of the total registered. Data provided by survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained from records maintained by the Mississippi State Board of Dental Examiners and from the 1968 American Dental Directory published by the American Dental Association.

Two-thirds (66 percent) of the survey respondents hold licenses to practice dentistry in one or more other States. Forty-two percent of the dentists located in Mississippi have one other license, while only 6 percent have two or more other licenses. The proportion of out-of-State dentists holding multiple licenses is considerably greater; slightly over one-fourth hold two or more other licenses. Almost three-fifths of the licenses held outside the State were issued by adjacent States, including some 20 percent each in Alabama and Tennessee, 18 percent in Louisiana, and 2 percent in Arkansas.

PROFESSIONAL TRAINING

More than nine in every 10 of Mississippi's 551 dentists are graduates of 12 dental schools located in the South. The largest contributor is the University of Tennessee, which has supplied slightly over two-fifths of the State's dental force. Loyola University (New Orleans) and Emory University have also made important contributions, having provided 21 percent and 17 percent, respectively, of the total supply. Only two other schools in this part of the country, Meharry Medical College and the University of Alabama, have contributed as much as 2 percent of Missippi's dentists. Fifteen schools located in other regions have provided the remaining 8 percent of the dentists. Of these schools, Northwestern University is the largest contributor, having graduated 4 percent of the State's supply.

The overall proportionate contribution of the University of Tennessee to Mississippi's dentist supply has increased substantially over the years, from one-fifth of the dentists in the State who graduated prior to World War II to three-fifths of those receiving their dental education since 1955. At the same time, the contribution of Emory University has shown a notable decrease.

Dental School Attended and Year of Graduation for Dentists in Mississippi

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	551	-	195	225	131
		(Percent distribution by school)			
Schools in the South	509	92	98	89	88
Tennessee	233	42	60	40	19
Loyola (New Orleans)	117	21	26	23	12
Emory	94	17	5	13	42
9 other schools	65	12	7	13	15
Schools in other regions	42	8	2	11	12
Northwestern	21	4	1	6	5
14 other schools	21	4	1	5	7

Approximately 12 percent of the survey respondents, 63 dentists, reported that they had completed one year or more of advanced training after receiving their dental degree. Of the 44 dentists who reported advanced academic training, 17 had earned a master's or other advanced degree, while 27 had received no additional degrees but had completed one or more years of postgraduate study. Of the 31 dentists with advanced clinical training, 20 had completed an internship, and 11, a residency. Twelve dentists had completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Slightly over one-fourth of the 551 dentists in Mississippi are located in the two metropolitan areas of the State. The two-county Jackson area has 105 dentists, approximately 20 percent of the total dental force, while the Biloxi-Gulfport area contains 8 percent.

Distribution of Mississippi Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	82	551	100
Metropolitan areas	3	150	27
Jackson area	2	105	19
Biloxi-Gulfport area	1	45	8
Nonmetropolitan counties	79	401	73
Central city 25,000-49,999	5	93	17
Central city 10,000-24,999	10	121	22
Central city 5,000-9,999	16	80	15
Central city 2,500-4,999	16	51	9
Central city under 2,500	32	56	10

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Almost three-fourths (401) of the State's dentists are located in the 79 nonmetropolitan counties. The 15 counties with central cities of 10,000 or more persons have 214 dentists, some two-fifths of the State's dental force. Two of these counties--Forrest and Lauderdale--have more than 20 dentists each, while seven other counties have at least 15 dentists each.

The 64 counties with fewer than 10,000 persons in their central cities have one-third of the State's dentist supply. There are 131 dentists in the 32 counties having between 2,500 and 9,999 persons in their central cities, while 56 dentists are scattered among the 32 counties with central cities of less than 2,500 population. While only 12 of these 64 counties have as many as five dentists, 29 counties have fewer than three dentists.

AGE DISTRIBUTION OF DENTISTS

The median age of dentists in Mississippi is 41.9 years. Almost three in every 10 (28 percent) of the dentists are under 35 years of age, while only 16 percent are 55 years of age or older. Well over half of all dentists in the State are between 35 and 54, with about one-third between 35 and 44 years of age.

Age Distribution of Mississippi Dentists

Age in 1965*	Number of dentists	Percent of dentists	Cumulative percent
Total	551[1/]	100	-
Under 30	62	12	12
30 - 34	85	16	28
35 - 39	93	17	45
40 - 44	86	16	61
45 - 49	81	15	76
50 - 54	45	8	84
55 - 59	41	7	91
60 - 64	24	4	95
65 & over	30	5	100

[1/] Includes 4 dentists for whom age is not available. Percents are based on total for whom age is known.

* Age computed to 1965 to enable comparison among all States surveyed.

The age distribution of dentists is similar throughout the State. Dentists located in the two metropolitan areas, with a median age of 41.4 years, are about a year younger, on the average, than dentists located in nonmetropolitan counties, where the median age is 42.3 years.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 551 dentists in Mississippi, 541, or 98 percent, are active in their profession, giving the State one professionally active dentist for every 4,096 persons. In the metropolitan areas, there are 2,574 persons per dentist, with the Jackson area having the better ratio of 2,358, while the Biloxi-Gulfport area has only one dentist for every 3,089 persons.

Number of Persons Per Active Dentist in Mississippi

County group*	Professionally active dentists	Population	Persons per dentist
All counties	541	2,216,100	4,096
Metropolitan areas	149	383,500	2,574
Jackson area	105	247,600	2,358
Biloxi-Gulfport area	44	135,900	3,089
Nonmetropolitan counties	392	1,832,600	4,675
Central city 25,000-49,999	91	310,100	3,408
Central city 10,000-24,999	118	438,200	3,714
Central city 5,000-9,999	78	385,000	4,936
Central city 2,500-4,999	50	297,100	5,942
Central city under 2,500	55	402,200	7,313

* See Appendix Table for individual county data.

The 79 nonmetropolitan counties average a less favorable ratio of 4,675 persons per dentist. Fifteen of these counties have ratios under 4,000, while an equal number have ratios of 8,000 or more, including 7 counties with over 10,000 persons per dentist. In addition, there are six counties which have no active dentists, according to available information.

In nonmetropolitan counties, the ratios of persons per dentist generally become much less favorable as the size of the central city decreases. Counties with central city populations of 25,000 to 49,999 persons average some 3,400 persons per dentist, while counties with 5,000 to 9,999 inhabitants in their central cities have only one dentist for every 4,900 persons. The group of counties with central city populations of less than 2,500 has the least favorable ratio--7,300 persons per dentist.

UTILIZATION OF AUXILIARIES

Eighty-six percent of Mississippi's responding practitioners (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 81 percent of the dentists, including 75 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 28 percent of the dentists, more than two-thirds of whom employ at least one full time. Dental hygienists are employed by 8 percent of the practitioners, and laboratory technicians by 7 percent. Hygienists and laboratory technicians are more likely to be employed on a part-time basis than are other auxiliary personnel.

Mississippi Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	488[1/]	100	81	5
One or more auxiliaries	422	86	81	5
Assistant	394	81	75	6
Hygienist	41	8	4	4
Laboratory technician	34	7	3	4
Secretary or receptionist	135	28	20	8
Other type of personnel	24	5	2	3
No auxiliary	66	14	-	-

[1/] Includes 12 dentists who did not report on auxiliary utilization.

Employment of auxiliaries varies with the age of the dentist and is more common among younger dentists. Almost 95 percent of the practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 82 percent among dentists 45 to 64 years of age and to 48 percent among dentists 65 or over.

About one-fifth of all Mississippi practitioners reported one or more vacant positions for auxiliary personnel. Forty percent of these dentists indicated vacancies for full-time dental hygienists and 34 percent for full-time dental assistants.

OTHER SURVEY FINDINGS

☐ Ninety-six percent of the responding professionally active dentists in Mississippi are primarily engaged in private practice, with 94 percent self-employed and 2 percent employed by another dentist. The remaining 4 percent are either employed by a governmental agency, or are engaged in other dental activities, such as taking advanced training.

☐ Dentists reporting on time spent in providing patient care devoted an average of 40.7 hours per week to this activity for 48.3 weeks during the year prior to the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ Eight percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics, followed by oral surgery, and pedodontics. About one in every six dentists in metropolitan areas limits his practice as compared to one in every 20 in nonmetropolitan counties.

☐ Seven percent of the responding dentists had practiced as civilian dentists in one of 14 other States prior to assuming their present Mississippi location. More than half of these dentists came from other Southern States, primarily Louisiana and Tennessee.

☐ Of the 281 dentists who are licensed in Mississippi but located in another State, more than three of every five are located in adjacent States, principally in Alabama, Louisiana, and Tennessee. Another 16 percent are in the nearby States of Georgia, Florida, and Texas, while the remainder are scattered among 18 other States and the District of Columbia.

March 1969.

APPENDIX TABLE

Selected Data on Dentists in Mississippi, by Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
All counties	551	513	38	147	95	541	2,216.1	4,096
Metropolitan areas[2]	150	138	12	34	22	149	383.5	2,574
Jackson area	105	100	5	25	14	105	247.6	2,358
Hinds	101	96	5	24	13	101	210.4	2,083
Rankin	4	4	-	1	1	4	37.2	9,300
Biloxi-Gulfport area	45	38	7	9	8	44	135.9	3,089
Harrison	45	38	7	9	8	44	135.9	3,089
Nonmetropolitan counties[3]	401	375	26	113	73	392	1,832.6	4,675
Central city 25,000-49,999	93	82	11	22	13	91	310.1	3,408
Forrest	23	20	3	6	1	23	56.8	2,470
Jones	15	15	-	5	3	15	60.1	4,007
Lauderdale	22	20	2	3	5	22	70.2	3,191
Warren	15	13	2	3	3	14	44.4	3,171
Washington	18	14	4	5	1	17	78.6	4,624
Central city 10,000-24,999	121	116	5	36	22	118	438.2	3,714
Adams	11	11	-	4	1	11	38.7	3,518
Alcorn	9	9	-	2	2	9	25.9	2,878
Bolivar	9	8	1	3	1	9	53.1	5,900
Coahoma	11	11	-	3	4	10	46.2	4,620

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Mississippi, by Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
Nonmetropolitan counties[3/] (cont'd.)								
Central city 10,000-24,999 (cont'd.)								
Jackson	19	19	-	7	4	19	69.2	3,642
Lee	15	15	-	3	2	15	41.9	2,793
Leflore	15	14	1	4	1	15	46.0	3,067
Lowndes	15	14	1	5	5	15	51.4	3,427
Pike	10	8	2	2	2	8	34.9	4,363
Yazoo	7	7	-	3	-	7	30.9	4,414
Central city 5,000-9,999	80	75	5	21	16	78	385.0	4,936
Attala	5	5	-	3	-	5	20.2	4,040
Clay	4	4	-	-	1	4	19.7	4,925
Grenada	4	4	-	2	-	4	18.6	4,650
Hancock	3	2	1	1	-	3	15.7	5,233
Lafayette	6	5	1	-	2	6	21.3	3,550
Lincoln	6	5	1	-	1	6	26.2	4,367
Madison	6	5	1	1	3	6	32.8	5,467
Marion	5	5	-	2	-	5	21.5	4,300
Marshall	4	4	-	1	1	4	24.4	6,100
Monroe	7	7	-	3	1	6	33.6	5,600
Neshoba	3	2	1	-	2	3	19.3	6,433
Oktibbeha	5	5	-	3	-	5	27.7	5,540
Pearl River	7	7	-	1	3	6	24.0	4,000
Sunflower	7	7	-	2	2	7	42.7	6,100
Union	4	4	-	1	-	4	18.8	4,700
Winston	4	4	-	1	-	4	18.5	4,625

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Mississippi, by Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city 2,500-4,999	51	49	2	16	11	50	297.1	5,942
Chickasaw	3	3	-	1	-	3	16.5	5,500
Claiborne	2	2	-	1	1	2	9.7	4,850
Copiah	6	6	-	2	1	6	26.1	4,350
Holmes	4	4	-	-	1	4	25.2	6,300
Humphreys	2	2	-	1	1	2	18.1	9,050
Montgomery	1	1	-	1	-	1	13.0	13,000
Newton	4	4	-	1	1	4	18.5	4,625
Panola	5	5	-	2	-	5	28.4	5,680
Prentiss	4	3	1	2	-	4	17.9	4,475
Quitman	2	2	-	-	-	2	19.7	9,850
Scott	4	3	1	1	1	3	21.5	7,167
Tallahatchie	2	2	-	-	1	2	21.9	10,950
Tate	3	3	-	1	1	3	18.9	6,300
Tippah	4	4	-	1	2	4	14.5	3,625
Wayne	3	3	-	2	1	3	15.9	5,300
Yalobusha	2	2	-	-	-	2	11.3	5,650
Central city under 2,500	56	53	3	18	11	55	402.2	7,313
Amite	1	1	-	1	-	1	14.9	14,900
Benton	-	-	-	-	-	-	7.6	-
Calhoun	4	4	-	2	-	4	15.5	3,875
Carroll	-	-	-	-	-	-	9.8	-
Choctaw	1	1	-	-	-	1	7.4	7,400
Clarke	1	1	-	-	-	1	16.0	16,000

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Mississippi, by Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
Nonmetropolitan counties[3/] (cont'd.)								
Central city under 2,500 (cont'd.)								
Covington	2	2	-	-	-	2	13.3	6,650
De Soto	3	3	-	1	-	3	24.3	8,100
Franklin	1	1	-	1	-	1	8.8	8,800
George	3	3	-	-	2	3	11.2	3,733
Greene	-	-	-	-	-	-	8.4	-
Issaquena	-	-	-	-	-	-	2.6	-
Itawamba	3	2	1	1	1	3	14.7	4,900
Jasper	1	1	-	-	-	1	16.4	16,400
Jefferson	1	-	1	-	-	1	9.7	9,700
Jefferson Davis	2	2	-	-	-	2	12.8	6,400
Kemper	-	-	-	-	-	-	10.9	-
Lamar	1	1	-	-	-	1	14.4	14,400
Lawrence	2	2	-	1	1	2	9.1	4,550
Leake	2	2	-	-	-	2	17.1	8,550
Noxubee	2	2	-	-	1	2	16.2	8,100
Perry	-	-	-	-	-	-	8.6	-
Pontotoc	3	3	-	1	-	3	16.6	5,533
Sharkey	1	1	-	-	1	1	9.9	9,900
Simpson	5	5	-	2	1	5	20.3	4,060
Smith	3	3	-	1	1	3	13.7	4,567
Stone	2	2	-	2	-	2	6.7	3,350
Tishomingo	3	2	1	2	1	2	14.0	7,000
Tunica	1	1	-	-	-	1	15.6	15,600

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Mississippi, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)								
Central city under 2,500 (cont'd.)								
Walthall	2	2	-	1	1	2	12.8	6,400
Webster	2	2	-	1	1	2	10.1	5,050
Wilkinson	4	4	-	1	-	4	12.8	3,200

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2/ Mississippi counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN MISSOURI

During the 1965 registration period, 4,127 dentists registered with the Missouri Dental Board. Of these dentists, only 52 percent were civilians actually located in Missouri, while 42 percent were civilians located in other states, and 6 percent were on active duty with the Armed Forces.

Location and Military Status of Dentists Licensed in Missouri

Location and military status	All dentists	Percent of dentists
Total licensed	4,127	100
Respondents	3,693	89
Nonrespondents	434	11
Total licensed	4,127	100
Civilians in Missouri	2,146	52
Respondents	1,982	-
Nonrespondents	164	-
Civilians in another state	1,750	42
On active duty with Armed Forces	230	6
Not reported	1	*

* Less than one-half of one percent.

The survey questionnaire was completed by 3,693 dentists, 89 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Missouri Dental Board or from the 1966 American Dental Directory, published by the American Dental Association.

Among the survey respondents, approximately three of every five (58 percent) hold a license to practice dentistry in one or more other states. About 28 percent of the dentists located in Missouri hold more than one license, with 23 percent licensed in one other state and 5 percent licensed in two or more other states. The proportion of out-of-state dentists holding multiple licenses is considerably greater; 27 percent hold two or more licenses in addition to their Missouri license. Approximately three-fifths of the licenses held outside of Missouri are held in adjacent states, including 27 percent in Kansas, 14 percent in Illinois, 8 percent in Oklahoma, and 5 percent in Arkansas.

PROFESSIONAL TRAINING

The great majority of Missouri's dentists--more than 9 of every 10--have graduated from one of the three in-state dental schools. The University of Missouri at Kansas City and St. Louis University each have provided approximately one-third of the State's dental force, while Washington University has contributed another 21 percent. In addition, ten schools in adjacent states have together supplied five percent of Missouri's dentists. Among these schools, Meharry Medical College (Nashville) and the University of Tennessee have been the largest contributors, although each has provided only one percent. The remaining 3 percent were trained in schools scattered throughout 15 other states.

Relatively few of Missouri's dentists are recent dental school graduates. Only 20 percent of the dental force graduated from dental school after 1955, while more than 50 percent of the State's dentists graduated during the years prior to World War II. The overall proportionate contribution of the University of Missouri to the State's dental supply has increased substantially over the years, while the contributions of St. Louis University and Washington University have shown notable decreases. Approximately one-half of the dentists in the State who graduated since 1955 received their dental education at the University of Missouri.

Dental School Attended and Year of Graduation
for Dentists in Missouri

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	2,146 [1]	-	441	586	1,114
		(Percent distribution by school)			
Schools in Missouri	1,968	92	89	94	92
Univ. of Missouri at Kansas City	792	37	48	38	31
St. Louis University	733	34	24	38	36
Washington University	443	21	17	18	24
31 other schools	171	8	11	6	8

[1] Dental school attended not available for 7 dentists and year of graduation for 5 dentists. Percents based on known totals.

Some 14 percent of the survey respondents (281 dentists) reported that they had completed one year or more of advanced training after receiving the dental degree. About 200 dentists reported completion of advanced academic training as graduate or postgraduate students, and 128 dentists completed advanced clinical training as residents or interns. There are 47 dentists who completed both academic and clinical training. Advanced training, particularly advanced academic work, is more common among younger dentists. Some 24 percent of survey respondents under 40 years of age reported a year or more of graduate or postgraduate study, as compared with 17 percent of those 40 to 54 years, and only 6 percent of those 55 and over.

DISTRIBUTION OF DENTISTS

Approximately three-fourths of the licensed dentists in Missouri are located in the 4 metropolitan areas of the State. The St. Louis area alone has 962 dentists, 45 percent of all dentists in the State. The city of St. Louis together with St. Louis County has 903 of these dentists, while the three other counties in the area have only 59 dentists. The 4-county Kansas City area has the second largest dental force, some 500 dentists, accounting for 23 percent of the State supply. About nine-tenths of these dentists are concentrated in Jackson County, where Kansas City is located. The two remaining metropolitan areas, Springfield and St. Joseph, have 4 percent and 2 percent of Missouri's dentists, respectively.

Distribution of Missouri Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	114	2,146	100
Metropolitan areas	10	1,583	74
St. Louis area (Mo. part)	4	962	45
Kansas City area (Mo. part)	4	499	23
Springfield area	1	83	4
St. Joseph area	1	39	2
Nonmetropolitan counties	104	563	26
Central city 10,000-49,999	13	190	9
Central city 2,500- 9,999	42	251	11
Central city under 2,500	49	122	6

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

Slightly more than one-fourth (563) of Missouri's dentists are located in the 104 nonmetropolitan counties of the State. The 13 counties with central cities of 10,000 or more persons have 190 dentists, almost 10 percent of the State's dental force. Jasper County, with approximately 40 dentists, has the largest dental force of any nonmetropolitan county. The only other nonmetropolitan counties with as many as 20 dentists are Boone and Cole.

The 91 counties with less than 10,000 persons in their central cities have one-sixth of the State's dentist supply. There are 251 dentists in the 42 counties having between 2,500 and 9,999 persons in their central cities, while 122 dentists are scattered among the 49 counties with central cities of less than 2,500 population. While only seven of these 91 counties have as many as 10 dentists, more than half (48) have no more than 3 dentists, including 12 with only one dentist,and four counties that apparently have no dentists.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of the 2,128 dentists for whom age was obtainable is a rather high 51.5 years. Only 25 percent of Missouri's dentists (536) are under 40 years of age, including just 16 percent who are under 35. On the other hand, more than two-fifths, or 925 dentists, are 55 years or over. Almost one in every four, or 510 dentists, are 65 years old or more, including 307 who have reached the age of 70.

Median Age and Age Distribution of Missouri Dentists by County Group

County group	Median age	Percent of dentists Under 40	40-54	55 & over
All counties	51.5	25	31	44
Metropolitan counties	50.9	26	32	42
St. Louis area (Mo. part)	52.6	23	33	44
Kansas City area (Mo. part)	52.2	31	31	38
Springfield area	43.9	37	33	30
St. Joseph area	61.1	21	23	56
Nonmetropolitan counties	53.5	22	30	48
Central city 10,000-49,999	48.6	27	35	38
Central city 2,500- 9,999	55.5	18	31	51
Central city under 2,500	63.2	23	21	56

The median age of dentists in metropolitan areas is 50.9 years, somewhat lower than the median of 53.5 years for dentists in nonmetropolitan counties. Median ages of dentists in the St. Louis and Kansas City areas are quite similar, about 52 years. Dentists in the Springfield area are the youngest as a group, with a median age of 43.9. More than 35 percent of the dentists in this area are under 40 years of age, and less than one-third are 55 or older. Dentists in the St. Joseph area are the oldest as a group, with a median age of 61.1 years. Only one-fifth of these dentists are under 40, while well over half have reached the age of 55.

Dentist ages in nonmetropolitan counties tend to increase rapidly as the size of the central city declines. The median age of dentists in counties with central cities of at least 10,000 population is 48.6 years, compared to a median age of 55.5 in counties containing a central city of 2,500-9,999 inhabitants, and 63.2 years (almost 12 years above the State average) in counties with less than 2,500 persons in their central cities.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 2,146 dentists in Missouri, 1,975, or 92 percent, are active in their profession, giving Missouri one professionally active dentist for every 2,271 persons. In the metropolitan areas--which have 74 percent of all active dentists and 62 percent of the population--the ratio is one dentist for every 1,889 persons. The remainder of the State--which has 26 percent of the active dentists and 38 percent of the population--has a less favorable ratio of one dentist for every 3,381 persons.

Number of Persons per Active Dentist in Missouri

County group*	Professionally active dentists	Population	Persons per dentist
All counties	1,975	4,484,800	2,271
Metropolitan areas	1,470	2,777,200	1,889
St. Louis area (Mo. part)	886	1,728,600	1,951
Kansas City area (Mo. part)	470	824,100	1,753
Springfield area	77	136,300	1,770
St. Joseph area	37	88,200	2,384
Nonmetropolitan counties	505	1,707,600	3,381
Central city 10,000-49,999	179	485,200	2,711
Central city 2,500- 9,999	220	760,600	3,457
Central city under 2,500	106	461,800	4,357

* See Appendix Table for individual county data.

Among the metropolitan areas, the 4-county Kansas City area has the best ratio with 1,753 persons per active dentist. Jackson County, the hub of the area, has the best ratio in the State, 1,584 persons per active dentist, while the other three counties in the area have a considerably higher average persons-per-dentist ratio of 3,035. The 4-county St. Louis area has a ratio of 1,951 persons per dentist, slightly less favorable than that of the Kansas City area. St. Louis County together with the city of St. Louis has the best ratio in the area, with one dentist for every 1,848 persons, while the remaining three counties have a much higher average ratio of 3,509 persons per dentist. The Springfield area has a ratio comparable to that of the Kansas City area, 1,770 persons per dentist. The ratio of one dentist for every 2,384 persons in the St. Joseph area is the least favorable among the metropolitan areas.

Among the nonmetropolitan counties there are 16 with persons-per-dentist ratios under 2,500, yet 37 counties have ratios exceeding 4,000 persons per dentist, including 19 counties with ratios over 6,000. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city decreases. The group of counties with central cities of 10,000 or more population have an average persons-per-dentist ratio of approximately 2,700, while counties with central cities of less than 2,500 inhabitants average over 4,300 persons per dentist.

UTILIZATION OF AUXILIARIES

Almost three-fourths of the responding practitioners in Missouri (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 65 percent of all practitioners, including 59 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 25 percent of the dentists, with slightly over two-thirds of these dentists utilizing such personnel full time. Dental hygienists and laboratory technicians are utilized with considerably less frequency, each of these auxiliaries being employed by only 8 percent of the dentists. Hygienists and technicians are more likely to be employed on a part-time basis than are other auxiliary personnel.

Missouri Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed by dentists	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time auxiliary (or more)	With only part-time auxiliaries
Total	1,801 [1/]	100	66	6
With one or more auxiliaries	1,238	72	66	6
Assistant	1,122	65	59	6
Hygienist	143	8	4	4
Laboratory technician	136	8	3	5
Secretary or receptionist	427	25	17	8
Other type of personnel	30	2	1	1
With no auxiliary	488	28	-	-

1/ Includes 75 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist and tends to be more frequent among younger dentists. Eighty-six percent of Missouri dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 73 percent among dentists 45 to 64 years old and to only 38 percent among dentists 65 and over. Young dentists just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age and of hygienists until age 35.

About 14 percent of the responding dentists in Missouri reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, one-third indicated a need for full-time hygienists and one-third reported vacancies for full-time dental assistants. Nine of every 10 dentists reporting a vacancy already employ one or more auxiliaries.

OTHER SURVEY FINDINGS

- Ninety-four percent of the responding professionally active dentists in Missouri are primarily engaged in private practice, with 93 percent self-employed and one percent employed by another dentist. Three percent are on the staffs of dental schools, another one percent are employed by governmental agencies, and the remaining two percent are engaged in other dental activities, such as taking advanced training.

- At least one part-time dental activity in addition to their principal employment was reported by 12 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. A variety of other secondary dental activities were reported, including employment by another dentist and working in governmental agencies.

- Dentists reporting time spent in patient care devoted an average of 39.4 hours per week to this activity for 47.6 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of 6 days a week, 48 hours or more, for at least 48 weeks.

- About 13 percent of the practitioners reported they limit their practice to a dental specialty, primarily orthodontics or oral surgery. The metropolitan areas have a large share--about nine-tenths--of the dentists who limit their practices. One in every 7 dentists practicing in a metropolitan area limits his practice, whereas in nonmetropolitan counties, only one in every 25 dentists does so.

- Of the 1,750 dentists licensed in Missouri but located out-of-state, approximately one-third were located in the adjacent states of Kansas and Illinois. The remaining out-of-state dentists are scattered throughout 45 other states, the largest numbers being in the nearby states of Arkansas, Colorado and Oklahoma, and the more distant state of California.

APPENDIX TABLE

Selected Data on Dentists in Missouri, by Location

County group and county	Civilian dentists					Profes-sionally active	Population [1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965: Percent Under 40	Age in 1965: Percent 55 or more			
All counties	2,146	1,982	164	25	44	1,975	4,484.8	2,271
Metropolitan areas [2]	1,583	1,443	140	26	42	1,470	2,777.2	1,889
St. Louis area (Mo. part)	962	869	93	23	44	886	1,728.6	1,951
Franklin	20	19	1	25	55	19	48.3	2,542
Jefferson	22	20	2	32	41	19	78.1	4,111
St. Charles	17	16	1	39	24	17	66.6	3,918
St. Louis County & St. Louis City	903	814	89	22	45	831	1,535.6	1,848
Kansas City area (Mo. part)	499	464	35	31	38	470	824.1	1,753
Cass	9	9	-	33	56	9	34.5	3,833
Clay	42	41	1	48	19	40	105.6	2,640
Jackson	442	408	34	30	39	415	657.2	1,584
Platte	6	6	-	33	33	6	26.8	4,467
Springfield area	83	75	8	37	30	77	136.3	1,770
Greene	83	75	8	37	30	77	136.3	1,770
St. Joseph area	39	35	4	21	56	37	88.2	2,384
Buchanan	39	35	4	21	56	37	88.2	2,384

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

County group and county	Civilian dentists					Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965				
				Percent Under 40	Percent 55 or more			
Nonmetropolitan counties 3/	563	539	24	22	48	505	1,707.6	3,381
Central city 25,000-49,999	106	104	2	25	40	99	229.6	2,319
Boone	25	24	1	28	32	24	61.2	2,550
Cape Girardeau	19	19	-	26	42	17	44.9	2,641
Cole	23	22	1	30	43	22	43.6	1,982
Jasper	39	39	-	21	41	36	79.9	2,219
Central city 10,000-24,999	84	77	7	30	35	80	255.6	3,195
Adair	10	10	-	40	40	10	20.6	2,060
Audrain	7	6	1	29	14	7	27.2	3,886
Butler	12	11	1	36	25	11	33.9	3,082
Callaway	6	4	2	-	50	6	24.0	4,000
Marion	13	13	-	31	46	12	29.5	2,458
Pettis	12	9	3	33	33	10	38.8	3,880
Phelps	9	9	-	22	33	9	27.2	3,022
Randolph	7	7	-	14	28	7	21.7	3,100
Scott	8	8	-	38	25	8	32.7	4,088
Central city 5,000-9,999	133	130	3	22	49	116	419.6	3,617
Cooper	6	5	1	33	67	3	14.9	4,967
Dunklin	9	9	-	22	56	9	37.2	4,133
Grundy	8	8	-	25	75	5	12.0	2,400
Henry	8	8	-	25	38	7	19.0	2,714
Howell	5	5	-	20	-	5	21.6	4,320
Johnson	7	7	-	28	28	6	32.9	5,483
Laclede	11	10	1	18	73	8	19.0	2,375

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Percent Under 40	Percent 55 or more			
Nonmetropolitan counties (cont'd.)								
Central city 5,000-9,999 (cont'd.)								
Linn	6	6	-	-	83	6	15.8	2,633
Livingston	6	6	-	33	33	6	15.3	2,550
Mississippi	4	3	1	50	50	3	19.7	6,567
Newton	10	10	-	20	50	9	30.8	3,422
Nodaway	7	7	-	14	57	7	22.4	3,200
Pemiscot	6	6	-	17	33	5	34.8	6,960
Perry	5	5	-	20	60	5	14.5	2,900
St. Francois	14	14	-	14	50	14	37.0	2,643
Saline	11	11	-	18	36	9	25.3	2,811
Stoddard	5	5	-	20	20	4	27.8	6,950
Vernon	5	5	-	40	60	5	19.6	3,920
Central city 2,500-4,999	118	112	6	15	53	104	341.0	3,279
Barry	10	9	1	20	60	10	17.7	1,770
Barton	7	7	-	-	86	7	10.5	1,500
Bates	6	6	-	-	50	5	15.2	3,040
Carroll	5	5	-	-	40	3	13.1	4,367
Cedar	3	3	-	-	67	3	8.5	2,833
Clinton	5	4	1	-	20	4	11.5	2,875
Dent	4	4	-	-	50	3	10.3	3,433
Gasconade	4	3	1	-	50	4	12.0	3,000
Harrison	4	4	-	-	50	4	10.4	2,600
Howard	4	4	-	-	50	3	20.4	3,467
Lafayette	10	10	-	20	40	8	25.3	3,162

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Percent Under 40	Percent 55 or more			
Nonmetropolitan counties (cont'd.)								
Central city 2,500-4,999 (cont'd.)								
Lawrence	10	10	-	10	70	9	23.1	2,567
Lewis	3	3	-	-	67	2	11.0	5,500
Macon	6	6	-	33	50	6	15.6	2,600
Madison	3	3	-	33	33	3	8.9	2,967
Miller	2	2	-	50	-	2	13.8	6,900
Moniteau	3	3	-	67	-	3	10.3	3,433
New Madrid	2	2	-	50	100	2	27.9	13,950
Pike	6	5	1	17	50	5	16.6	3,320
Polk	3	3	-	-	-	3	12.7	4,233
Ray	5	5	-	20	60	4	16.1	4,025
Ste. Genevieve	4	4	-	-	75	4	12.4	3,100
Washington	2	2	-	50	50	2	14.2	7,100
Wright	7	5	2	20	71	5	13.5	2,700
Central city under 2,500	122	116	6	23	56	106	461.8	4,357
Andrew	1	1	-	-	-	1	10.7	10,700
Atchinson	4	3	1	67	50	4	8.5	2,125
Benton	4	4	-	-	100	4	8.6	2,150
Bollinger	1	1	-	-	100	1	8.5	8,500
Caldwell	3	3	-	-	100	2	8.3	4,150
Camden	2	2	-	50	50	2	9.6	4,800
Carter	0	0	-	-	-	0	3.6	-
Chariton	6	5	1	-	33	5	11.6	2,320
Christian	3	3	-	33	33	3	12.3	4,100

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Percent Under 40	Percent 55 or more			
Nonmetropolitan counties (cont'd.)								
Central city under 2,500 (cont'd.)								
Clark	2	2	-	50	50	1	8.6	8,600
Crawford	3	3	-	33	33	2	13.2	6,600
Dade	3	3	-	-	100	3	6.9	2,300
Dallas	1	1	-	-	-	1	8.7	8,700
Daviess	3	3	-	33	67	3	8.8	2,933
DeKalb	2	1	1	-	50	1	6.8	6,800
Douglas	3	1	2	-	67	3	8.4	2,800
Gentry	3	3	-	33	67	2	7.7	3,850
Hickory	1	1	-	-	100	1	4.1	4,100
Holt	2	2	-	50	50	2	7.2	3,600
Iron	4	4	-	50	50	2	7.3	3,650
Knox	4	4	-	25	75	3	6.1	2,033
Lincoln	4	4	-	-	100	4	15.3	3,825
McDonald	2	2	-	-	-	2	10.7	5,350
Maries	1	1	-	-	-	1	7.2	7,200
Mercer	3	3	-	-	100	1	5.1	5,100
Monroe	3	3	-	33	67	3	10.3	3,433
Montgomery	3	3	-	-	67	3	10.9	3,633
Morgan	3	3	-	33	-	3	9.0	3,000
Oregon	1	1	-	-	100	1	8.8	8,800
Osage	1	1	-	100	-	1	10.7	10,700
Ozark	3	3	-	33	67	3	5.8	1,933
Pulaski	6	5	1	17	50	4	57.0	14,250
Putnam	3	3	-	-	67	2	6.0	3,000

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Missouri, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Percent Under 40	Percent 55 or more			
Nonmetropolitan counties (cont'd.)								
Central city under 2,500 (cont'd.)								
Ralls	0	0	-	-	-	0	7.7	-
Reynolds	1	1	-	100	-	1	4.5	4,500
Ripley	2	2	-	100	-	2	8.0	4,000
St. Clair	3	3	-	33	33	3	7.4	2,467
Schuyler	0	0	-	-	-	0	4.6	-
Scotland	1	1	-	100	-	1	6.0	6,000
Shannon	0	0	-	-	-	0	6.4	-
Shelby	3	3	-	-	67	3	8.6	2,867
Stone	2	2	-	-	100	2	7.5	3,750
Sullivan	1	1	-	100	-	1	7.6	7,600
Taney	9	9	-	22	56	8	10.3	1,288
Texas	5	5	-	40	40	4	17.2	4,300
Warren	1	1	-	-	-	1	9.3	9,300
Wayne	2	2	-	50	50	2	7.9	3,950
Webster	3	3	-	-	67	3	13.2	4,400
Worth	1	1	-	-	100	1	3.3	3,300

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2/ Missouri counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For the interstate St. Louis and Kansas City SMSA's, statistics are presented only for dentists located in the Missouri portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN MONTANA

During the 1966 registration period, 532 dentists registered with the Montana State Board of Dental Examiners. A total of 500 dentists responded to the survey, 94 percent of all those registered. Sixty-two percent of the responding dentists are civilians located in Montana, 32 percent are civilians located in other states, and 6 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Montana

Location and military status	All dentists	Percent of dentists
Total	532	100
Respondents	500	94
Nonrespondents	32	6
Respondents	500	100
Civilians in Montana	309	62
Civilians in another state	161	32
On active duty with Armed Forces	30	6

Multiple licensure is quite common in Montana, with more than three-fifths of the respondents located in the State holding more than one license. Forty-two percent indicated licensure in one additional state and 19 percent in two or more other states. Of those dentists registering in Montana, but located out of state, a relatively high proportion--38 percent--are licensed in two or more states other than Montana.

Survey respondents hold a total of some 1,000 licenses, an average of two per dentist. Two-fifths of the licenses held in states outside of Montana are held in the Western States of California, Oregon, Washington, and Idaho. Another one-fourth are held in the North Central States of Minnesota, Illinois, and Wisconsin.

PROFESSIONAL TRAINING

More than four-fifths (83 percent) of Montana's dentists are graduates of 12 dental schools located in the North Central States. The largest contributor among these schools is the University of Minnesota, which has supplied almost one-fourth of the State's dental force. Northwestern and Marquette Universities have also made important contributions, each having provided 11 percent of the total supply. Other schools in this part of the Country to contribute as many as 20 of Montana's dentists are Creighton University and Loyola University of Chicago.

Fourteen schools located in other regions have provided the remaining 17 percent of the dentists in Montana. The only one of these schools to contribute a substantial number of dentists, however, is the University of Oregon, which has graduated 9 percent of the State's supply.

Dental School Attended and Year of Graduation
for Dentists in Montana

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	309[1]	-	93	109	106
		(Percent distribution by school)			
Schools in North Central States	257	83	80	86	83
Minnesota	71	23	18	19	30
Northwestern	35	11	9	14	11
Marquette	35	11	15	5	14
Creighton	29	9	13	11	5
Loyola (Chicago)	22	8	3	12	6
7 other schools	65	21	22	25	17
Schools in other states	52	17	20	14	17
Oregon	29	9	7	5	15
13 other schools	23	8	13	9	2

[1] Year of graduation not available for one dentist.

Some 13 percent of the survey respondents, 39 dentists, reported that they had completed one year or more of advanced training after receiving their dental degree. Of the 21 dentists with advanced clinical training, 5 had completed a residency and 16 an internship. Of the 25 dentists who reported advanced academic training, 14 had earned a master's or other advanced degree, and another 11 had received no additional degrees but had completed one or more years of postgraduate study. Seven dentists had completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Montana's dentists are unevenly distributed geographically, with two-thirds of the licensed dentists located in only 9 of the State's 56 counties. The two metropolitan areas, Billings (Yellowstone County) and Great Falls (Cascade County), have 28 percent of the dentists, 14 percent each. The 7 nonmetropolitan counties with at least 10,000 persons in their central cities have among them 119 dentists or 38 percent of the total dental force. Three of these nonmetropolitan counties--Missoula, Silver Bow, and Flathead--have more than 20 dentists, and two other counties--Gallatin and Lewis and Clark--have at least 10 dentists.

Distribution of Montana Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	56	309	100
Metropolitan areas	2	86	28
Billings area	1	44	14
Great Falls area	1	42	14
Nonmetropolitan counties	54	223	72
Central city 10,000-49,999	7	119	38
Central city 2,500- 9,999	15	60	20
Central city under 2,500	32	44	14

* See Appendix Table for definition of metropolitan areas, and presentation of individual county data.

The 47 nonmetropolitan counties comprising the two groups of counties with fewer than 10,000 persons in their central cities have approximately one-third of the State's dentist supply. There are 60 dentists in the 15 counties having between 2,500 and 9,999 persons in their central cities, while only 44 dentists are scattered among the 32 counties with central cities of less then 2,500 population. Only 9 of these 47 counties have as many as 5 dentists, and 21 counties have fewer than 2 dentists.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of Montana dentists is 43.4 years. One-fourth (76 dentists) are under 35, and almost a third (95 dentists) are between 35 and 44 years of age. On the other hand, a substantial proportion, approximately one-fourth, are 55 or over. Twelve percent (37 dentists) are at least 65 years of age, including 22 dentists who have reached the age of 70.

Median Age and Age Distribution of Montana Dentists
by County Group

County group	Median age	Percent by age in 1965			
		Under 35	35-44	45-54	55 & over
All counties	43.4	25	31	18	26
Metropolitan areas	43.5	20	36	23	21
Billings area	44.4	16	36	27	21
Great Falls area	42.8	24	36	19	21
Nonmetropolitan counties	43.3	26	29	16	29
Central city 10,000-49,999	42.8	25	34	15	26
Central city 2,500- 9,999	41.2	28	27	20	25
Central city under 2,500	47.5	27	18	14	41

Some variation is to be found in the median ages of dentists in the individual metropolitan areas and in the nonmetropolitan county groups. Of the two metropolitan areas, Billings has the oldest group of dentists, with a median age of 44.4. The median age of dentists in the Great Falls area is 42.8 years, the same as the median for dentists in the group of nonmetropolitan counties with central cities of 10,000 or more population.

Dentists in the group of nonmetropolitan counties with central city populations between 2,500 and 9,999 have a median age of 41.2 years, about 2 years under the State average. In the counties with fewer than 2,500 persons in their central cities, however, dentists are considerably older as a group, with a median age of 47.5 years. While more than one-fourth are under the age of 35, a substantial proportion, 41 percent, are at least 55 years of age.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 309 responding dentists in Montana, 96 percent (296) are active in their profession, giving Montana one professionally active dentist for every 2,426 persons. The two metropolitan areas, Billings and Great Falls, have similar ratios, averaging 2,047 persons per dentist. The seven nonmetropolitan counties with 10,000 or more inhabitants in their central cities average one dentist for every 1,958 persons, a ratio slightly better than that of the metropolitan areas, and considerably more favorable than the State average. Among these counties, three have persons-per-dentist ratios under 1,900--Missoula (1,467), Flathead (1,700), and Silver Bow (1,868).

Number of Persons per Active Dentist in Montana

County group*	Professionally active dentists	Population	Persons per dentist
All counties	296	718,100	2,426
Metropolitan areas	83	169,900	2,047
Billings area	42	86,100	2,050
Great Falls area	41	83,800	2,044
Nonmetropolitan counties	213	548,200	2,574
Central city 10,000-49,999	116	227,100	1,958
Central city 2,500- 9,999	56	175,600	3,136
Central city under 2,500	41	145,500	3,549

* See Appendix Table for individual county data.

Persons-per-dentist ratios are much less favorable in the two groups of counties with less than 10,000 persons in their central cities. The 15 counties with central city populations between 2,500 and 9,999 have an average of 3,136 persons per dentist, while the 32 counties with central cities of fewer then 2,500 inhabitants have an even less favorable ratio of 3,549 persons for every active dentist. Among these 47 counties, 13 have ratios exceeding 3,500 persons per dentist, including 8 counties with ratios in excess of 4,000. Another 12 counties have no active dentists, according to available information.

UTILIZATION OF AUXILIARIES

More than four-fifths of the dental practitioners in Montana (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel, including 76 percent who employ at least one auxiliary on a full-time basis. The most frequently employed auxiliary is the dental assistant. Three-fourths of the practitioners reported the use of an assistant, including 69 percent who utilize at least one full time. Approximately one-fourth of the dentists employ secretaries or receptionists, usually on a full-time basis. Dental hygienists and laboratory technicians are employed by fewer dentists, usually only part time.

Montana Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	292[1]	100	76	8
With one or more auxiliaries	238	84	76	8
Assistant	217	76	69	7
Hygienist	34	12	2	10
Laboratory technician	9	3	1	2
Secretary or receptionist	74	26	17	9
Other type of personnel	5	2	*	2
With no auxiliary	46	16	-	-

[1] Includes 8 dentists who did not report on auxiliary utilization.

* Less than one-half of one percent.

The use of auxiliaries varies with the age of the dentist and is less common among the older dentists. Ninety-one percent of the dental practitioners under the age of 55 reported employment of some type of auxiliary. The proportion utilizing auxiliaries decreases to 66 percent among dentists 55 to 65 years of age and to 46 percent among dentists 64 and over.

Some 17 percent of the dental practitioners in Montana reported one or more vacant positions for auxiliary personnel. Of these dentists, 35 percent indicated vacancies for full-time hygienists and 27 percent for full-time dental assistants.

OTHER SURVEY FINDINGS

- Almost all (99 percent) of the professionally active dentists in Montana are engaged in private practice. Dentists reporting on time spent in providing patient care devoted an average of 40.3 hours per week to this activity for 48.1 weeks during the year preceding the survey. About one dentist in nine worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

- Approximately 10 percent of the dental practitioners reported that they limit their practice to a dental specialty, primarily orthodontics, with oral surgery and pedodontics the next most common specialties. Twenty percent of the dentists in metropolitan areas limit their practices, as compared to only six percent in nonmetropolitan counties.

- Over two-fifths (43 percent) of the 161 civilian dentists licensed in Montana but located in another state are in one of the Pacific Coast states of Washington, Oregon, or California. Another 17 percent are located in adjacent states, primarily Idaho and Wyoming, and the remainder are scattered in 19 other states across the Nation.

- About one out of five out-of-state dentists reported that they had been professionally active in Montana immediately prior to assuming their present location in another state. One-half of the out-migrant dentists are now located in Washington, Oregon, or California.

June 1968.

APPENDIX TABLE

Selected Data on Dentists in Montana, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
All counties	309	76	82	296	718.1	2,426
Metropolitan areas 2/	86	17	18	83	169.9	2,047
Billings area	44	7	9	42	86.1	2,050
Yellowstone	44	7	9	42	86.1	2,050
Great Falls area	42	10	9	41	83.8	2,044
Cascade	42	10	9	41	83.8	2,044
Nonmetropolitan counties 3/	223	59	64	213	548.2	2,574
Central city 25,000-49,999	58	18	14	58	95.1	1,640
Missoula	33	10	5	33	48.4	1,467
Silver Bow	25	8	9	25	46.7	1,868
Central city 10,000-24,999	61	12	17	58	132.0	2,276
Deer Lodge	2	-	-	2	19.3	9,650
Flathead	22	5	8	20	34.0	1,700
Gallatin	13	3	1	13	28.2	2,169
Hill	8	2	4	8	20.5	2,563
Lewis and Clark	16	2	4	15	30.0	2,000
Central city 5,000-9,999	27	5	8	25	78.5	3,140
Custer	5	1	2	5	14.0	2,800
Dawson	5	1	1	5	13.6	2,720
Fergus	5	2	2	5	14.8	2,960
Park	7	-	3	5	13.6	2,720
Valley	5	1	-	5	22.5	4,500

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Montana, by Location

County group and county	Civilian dentists				Population [1] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
Nonmetropolitan counties [3] (cont'd.)						
Central city 2,500-4,999	33	12	7	31	97.1	3,132
Beaverhead	5	2	2	4	7.5	1,875
Big Horn	2	1	-	2	10.4	5,200
Glacier	5	1	2	5	12.9	2,580
Lincoln	4	2	1	4	14.1	3,525
Musselshell	1	1	-	1	4.8	4,800
Pondera	3	-	1	2	8.2	4,100
Powell	3	1	1	3	7.4	2,467
Richland	3	1	-	3	10.8	3,600
Roosevelt	4	2	-	4	12.7	3,175
Toole	3	1	-	3	8.3	2,767
Central city under 2,500	44	12	18	41	145.5	3,549
Blaine	2	1	1	2	8.1	4,050
Broadwater	-	-	-	-	2.8	-
Carbon	3	1	1	3	7.8	2,600
Carter	-	-	-	-	2.3	-
Chouteau	2	1	-	2	7.5	3,750
Daniels	1	1	-	1	3.7	3,700
Fallon	2	1	1	2	4.3	2,150
Garfield	-	-	-	-	1.9	-
Golden Valley	-	-	-	-	1.1	-
Granite	1	-	1	1	3.0	3,000
Jefferson	-	-	-	-	4.4	-
Judith Basin	-	-	-	-	3.1	-
Lake	5	1	1	5	13.2	2,640
Liberty	-	-	-	-	2.7	-
McCone	1	-	-	1	3.3	3,300

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Montana, by Location

County group and county	Civilian dentists				Population [1] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
Nonmetropolitan counties [3] (cont'd.)						
Central city under 2,500 (cont'd.)						
Madison	1	-	1	1	4.9	4,900
Meagher	2	1	1	2	2.9	1,450
Mineral	1	1	-	1	3.4	3,400
Petroleum	-	-	-	-	0.8	-
Phillips	1	-	-	1	6.0	6,000
Powder River	-	-	-	-	2.5	-
Prairie	1	-	1	-	2.3	-
Ravalli	7	1	4	6	12.1	2,017
Rosebud	2	2	-	2	6.0	3,000
Sanders	1	-	-	1	6.9	6,900
Sheridan	3	1	1	3	6.6	2,200
Stillwater	2	-	1	2	5.5	2,750
Sweet Grass	2	-	2	2	3.2	1,600
Teton	2	-	1	2	7.4	3,700
Treasure	-	-	-	-	1.3	-
Wheatland	1	-	-	1	2.8	2,800
Wibaux	1	-	1	-	1.7	-

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[2] Montana counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

[3] Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN NEBRASKA

During the 1967 registration period, 1,482 dentists registered with the Nebraska Board of Dental Examiners. A total of 1,350 dentists responded to the survey, 91 percent of all those registered. Sixty-four percent of the respondents are civilian dentists located in Nebraska, 32 percent are civilian dentists located in other States, and 4 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Nebraska

Location and military status	All dentists	Percent of dentists
Total licensed	1,482	100
Respondents	1,350	91
Nonrespondents	132	9
Respondents	1,350	100
Civilians in Nebraska	861	64
Civilians in another State	436	32
On active duty with Armed Forces	53	4

More than one-half (55 percent) of the survey respondents are licensed to practice dentistry in one or more other States. Approximately three of every ten dentists located in Nebraska hold more than one license, with 26 percent licensed in one other State and 5 percent licensed in two or more other States. Multiple licensure is considerably more common among dentists registered in Nebraska but located out-of-State, with about 30 percent having two or more licenses in addition to their Nebraska license.

Fifty-five percent of the out-of-State licenses are held in adjacent States, including 25 percent in Colorado, 15 percent in Iowa, and 15 percent in South Dakota, Wyoming, Kansas, and Missouri. The remainder are held in 32 other States throughout the Nation, with the largest proportion (12 percent) in California.

PROFESSIONAL TRAINING

More than nine-tenths of the 861 responding dentists in Nebraska are graduates of the two dental schools located in the State. The College of Dentistry at the University of Nebraska, the largest contributor, has graduated approximately one-half (52 percent) of the State's dental force. The Creighton University School of Dental Science has trained approximately two-fifths (42 percent) of the total dentist supply. The remaining 6 percent obtained their dental degrees from 14 out-of-State schools. Of these, the University of Missouri is the only school to have contributed as much as 2 percent of the State's dental force.

Dental School Attended and Year of Graduation for Dentists in Nebraska

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	861[1/]	-	198	239	419
		(Percent distribution by school)			
Schools in Nebraska	807	94	94	98	92
University of Nebraska	445	52	58	53	49
The Creighton University	362	42	36	45	43
14 schools in other States	52	6	6	2	8

[1/] Dental school attended not available for 2 dentists and year of graduation for 5 dentists. Percents based on known totals.

Relatively few of Nebraska's dentists are recent dental school graduates. Less than one-fourth (23 percent) of all dentists in the State have graduated since 1955, while almost one-half (49 percent) received their dental degrees prior to World War II. The overall proportion of the State's dentists graduating from the two in-State schools has remained relatively constant through the years; however, there has been a slight increase in the proportion graduating from the University of Nebraska, while the proportionate contribution of Creighton University has decreased somewhat.

Fourteen percent (119) of the survey respondents reported the completion of one or more years of advanced training after receiving their dental degree. Of 60 dentists reporting advanced clinical training, 50 had completed internships, and 10 had completed residencies. Seventy-one dentists reported advanced academic training, including 50 dentists who had received a master's or other advanced degree, and 21 who had received no additional degrees but had completed at least a year of postgraduate study. Twelve dentists had completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Approximately 47 percent of the responding dentists in Nebraska are located in the metropolitan areas. The Nebraska portion of the interstate Omaha area (Douglas and Sarpy Counties) has the largest number of dentists, 263, or 31 percent of the State supply. About nine-tenths of these dentists are concentrated in Douglas County, where Omaha is located. The second largest dental force, 16 percent of the State supply, is found in the Lincoln metropolitan area (Lancaster County).

Distribution of Nebraska Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	93	861	100
Metropolitan areas	4	404	47
Omaha area (Nebr. part)	2	263	31
Lincoln area	1	138	16
Sioux City area (Nebr. part)	1	3	**
Nonmetropolitan counties	89	457	53
Central city 10,000-49,999	9	166	19
Central city 2,500-9,999	25	166	19
Central city under 2,500	55	125	15

* See Appendix Table for definition of interstate and other metropolitan areas and presentation of individual county data.

** Less than one-half of 1 percent.

More than one-half (457) of the State's dentists are located in the 89 nonmetropolitan counties. The nine counties with central city populations of 10,000 or more have 166 dentists, about one-fifth of the State's total dental force, while the 25 counties having central city populations between 2,500 and 9,999 have another fifth. The remaining 15 percent (125 dentists) are scattered among the 55 counties having fewer than 2,500 persons in their central cities. Of the 89 nonmetropolitan counties, only 13 have as many as 10 dentists, while 55 counties have under five, including 11 counties which have no dentists, according to available information.

AGE DISTRIBUTION OF DENTISTS

The median age of dentists in Nebraska is 50.1 years. About 29 percent of the dentists are under 40 years of age, and an almost equal proportion are between 40 and 54. On the other hand, a substantial portion, more than two-fifths, are 55 or over. Almost one-fourth (208) are at least 65 years of age, including 120 who have reached the age of 70.

Age Distribution of Nebraska Dentists

Age in 1965*	Number of dentists	Percent of dentists	Cumulative percent
Total	861	100	-
Under 30	61	7	7
30 - 34	100	12	19
35 - 39	84	10	29
40 - 44	117	13	42
45 - 49	67	8	50
50 - 54	57	7	57
55 - 59	77	9	66
60 - 64	90	10	76
65 - 69	88	10	86
70 - 74	75	9	95
75 & over	45	5	100

* Age computed to 1965 to enable comparison among all States surveyed.

Dentists in the metropolitan areas, with a median age of 45.1 years, are more than 10 years younger, on the average, than are dentists in the nonmetropolitan counties, where the median age is 55.5 years. Slightly more than one-third of the dentists in metropolitan areas are under 40 years of age, while an almost equal proportion are 55 or over. In contrast, only one-fourth of the dentists in nonmetropolitan counties are under 40 years of age, while fully one-half are 55 or over.

The median ages of dentists in the Nebraska portion of the interstate Omaha metropolitan area and in the Lincoln area are somewhat similar, 44.6 and 46.1 years, respectively. Median ages in nonmetropolitan counties tend to increase as the size of the central city decreases. The median age of dentists in the counties with central cities of at least 10,000 population is 53.5 years, compared to a median age of 60.2 years in counties with fewer than 2,500 persons in their central cities.

ACTIVE DENTISTS IN RELATION TO POPULATION

More than nine in every ten, 95 percent, of the 861 dentists in Nebraska are active in their profession, giving the State one professionally active dentist for every 1,785 persons. Metropolitan areas have one dentist for every 1,565 persons, while nonmetropolitan counties have a somewhat higher ratio of 1,983.

The best ratio among the metropolitan areas is found in Lincoln, which has one dentist for every 1,298 persons. The Nebraska portion of the Omaha area has a somewhat higher ratio of 1,673. Dakota County, which constitutes the Nebraska part of the interstate Sioux City area, has a rather high ratio of 4,333 persons per dentist.

Number of Persons Per Active Dentist in Nebraska

County group*	Professionally active dentists	Population	Persons per dentist
All counties	820	1,464,000	1,785
Metropolitan areas	387	605,500	1,565
Omaha area (Nebr. part)	251	419,900	1,673
Lincoln area	133	172,600	1,298
Sioux City area (Nebr. part)	3	13,000	4,333
Nonmetropolitan counties	433	858,500	1,983
Central city 10,000-49,999	159	271,800	1,709
Central city 2,500-9,999	156	304,000	1,949
Central city under 2,500	118	282,700	2,396

* See Appendix Table for individual county data.

Twenty-seven of the 89 nonmetropolitan counties in the State have persons-per-dentist ratios below the average for the State, including 13 counties with ratios under 1,500. On the other hand, 28 counties have ratios exceeding 2,500 persons per dentist, including 9 with 4,000 or more persons per dentist. When counties are grouped according to the population of central city, the persons-per-dentist ratios generally increase as the size of the central city decreases. Counties with central city populations of 10,000 or more have an average ratio of 1,709 persons per dentist, while counties with fewer than 2,500 inhabitants in their central cities have 2,396 persons per dentist.

UTILIZATION OF AUXILIARIES

Four-fifths of Nebraska's responding dental practitioners (i.e., dentists who spend any time working at the chair) employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 73 percent of the dentists, including 65 percent who employ at least one assistant on a full-time basis. About 27 percent of the practitioners employ secretaries or receptionists, with more than three-fifths of these dentists utilizing such personnel full time. Dental hygienists and laboratory technicians are employed by 9 percent and 6 percent of the dentists, respectively. These auxiliaries are most often employed only part time.

Nebraska Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners: Total	With one full-time employee (or more)	With only part-time employees
Total	809[1/]	100	72	8
One or more auxiliaries	615	80	72	8
Assistant	566	73	65	8
Hygienist	67	9	4	5
Laboratory technician	50	6	1	5
Secretary or receptionist	208	27	17	10
Other type of personnel	16	2	1	1
No auxiliary	156	20	-	-

1/ Includes 38 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and is more common among the younger dentists. Approximately 95 percent of the practitioners between the ages of 30 and 44 employ auxiliaries. This proportion decreases to 80 percent for dentists 45 to 64 years of age and to only 50 percent for those 65 and over.

One of every seven dental practitioners reported a vacant position for auxiliary personnel. About one-third of these dentists indicated vacancies for full-time dental assistants, and one-third had vacancies for full-time dental hygienists.

OTHER SURVEY FINDINGS

- Ninety-three percent of the dental practitioners in Nebraska are primarily engaged in private practice, with 92 percent self-employed and 1 percent employed by other dentists. Four percent are on the staffs of dental schools, 2 percent are employed by governmental agencies, and the remaining 1 percent are engaged in some other dental activity, such as taking advanced training.

- About 12 percent of the dentists reported at least one secondary dental activity in addition to their principal employment. Part-time teaching at a dental school was reported by 6 percent of the dentists. Various other activities were reported, including employment by local government and assistance to voluntary agencies.

- Dentists providing patient care during the year preceding the survey devoted an average of 39.6 hours a week to this activity for 47.1 weeks. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks during the year.

- Twelve percent of the responding dental practitioners reported that they limit their practice to a dental specialty, most commonly to orthodontics, oral surgery, or pedodontics. Twenty percent of the dentists in metropolitan areas limit their practice, compared to only 6 percent of those in nonmetropolitan counties.

- Almost one-half (47 percent) of the dentists licensed in Nebraska but located in another State were in the six adjacent States, with the largest proportion, 23 percent, in Colorado. The remainder of the out-of-State dentists were located in 30 more distant States, primarily in California, which had 18 percent.

March 1969.

APPENDIX TABLE

Selected Data on Dentists in Nebraska, By Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or more			
All counties	861	245	375	820	1,464.0	1,785
Metropolitan areas 2/	404	135	142	387	605.5	1,565
Omaha area (Nebr. part)	263	88	93	251	419.9	1,673
Douglas	244	74	92	232	381.9	1,646
Sarpy	19	14	1	19	38.0	2,000
Lincoln area	138	47	47	133	172.6	1,298
Lancaster	138	47	47	133	172.6	1,298
Sioux City area (Nebr. part)	3	-	2	3	13.0	4,333
Dakota	3	-	2	3	13.0	4,333
Nonmetropolitan counties 3/	457	110	233	433	858.5	1,983
Central city 25,000-49,999	24	4	9	24	37.5	1,563
Hall	24	4	9	24	37.5	1,563
Central city 10,000-24,999	142	35	69	135	234.3	1,736
Adams	19	6	8	18	29.9	1,661
Buffalo	16	4	7	16	26.8	1,675
Dodge	17	3	6	16	36.4	2,275
Gage	20	3	14	16	26.7	1,669
Lincoln	13	4	6	13	29.1	2,238
Madison	19	6	12	19	25.5	1,342
Platte	16	6	6	15	26.3	1,753
Scotts Bluff	22	3	10	22	33.6	1,527

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Nebraska, By Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Under 40	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city 5,000-9,999	92	24	47	87	152.2	1,749
Box Butte	11	2	7	9	11.5	1,278
Cass	6	1	4	6	18.3	3,050
Cheyenne	6	2	3	5	16.1	3,220
Dawes	5	2	1	5	9.4	1,880
Dawson	15	4	9	14	19.5	1,393
Jefferson	6	1	3	6	10.6	1,767
Otoe	11	2	5	10	16.9	1,690
Phelps	4	1	2	4	10.2	2,550
Red Willow	8	4	3	8	13.5	1,688
Richardson	8	1	5	8	12.6	1,575
York	12	4	5	12	13.6	1,133
Central city 2,500-4,999	74	17	34	69	151.8	2,200
Cherry	6	1	2	4	8.1	2,025
Colfax	6	3	3	5	9.4	1,880
Cuming	4	1	1	4	12.0	3,000
Custer	9	1	4	7	15.3	2,186
Hamilton	3	1	1	3	8.6	2,867
Holt	8	2	5	8	13.1	1,638
Keith	6	2	1	6	8.3	1,383
Kimball	4	1	3	4	9.7	2,425
Nemaha	3	1	1	3	8.4	2,800
Nuckolls	4	1	2	4	7.6	1,900
Saline	5	1	3	5	11.8	2,360
Saunders	6	1	4	6	17.3	2,883

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Nebraska, By Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city 2,500-4,999 (cont'd.)						
Washington	5	-	2	5	12.4	2,480
Wayne	5	1	2	5	9.8	1,960
Central city under 2,500	125	30	74	118	282.7	2,396
Antelope	5	1	3	5	9.6	1,920
Arthur	1	-	1	1	0.6	600
Banner	-	-	-	-	1.3	-
Blaine	-	-	-	-	0.9	-
Boone	4	-	3	4	8.4	2,100
Boyd	1	1	-	1	4.3	4,300
Brown	3	1	2	3	4.0	1,333
Burt	5	-	4	5	9.6	1,920
Butler	4	-	3	2	9.7	4,850
Cedar	4	-	3	4	13.2	3,300
Chase	3	1	2	3	3.9	1,300
Clay	4	-	4	4	8.7	2,175
Deuel	2	-	1	2	3.0	1,500
Dixon	4	1	3	4	7.6	1,900
Dundy	4	1	3	4	3.1	775
Fillmore	3	1	2	3	9.3	3,100
Franklin	3	-	3	3	4.8	1,600
Frontier	1	-	1	1	3.9	3,900
Furnas	4	1	1	4	7.1	1,775
Garden	1	-	1	1	3.2	3,200
Garfield	1	1	-	1	2.6	2,600

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Nebraska, By Location

County group and county	Civilian dentists				Population [1/] (in 000's)	Persons per active dentist
		Age in 1965				
	Total	Under 40	55 years or more	Profes-sionally active		
Nonmetropolitan counties [3/] (cont'd.)						
Central city under 2,500 (cont'd.)						
Gosper	1	-	1	1	2.3	2,300
Grant	-	-	-	-	0.9	-
Greeley	1	-	1	1	4.1	4,100
Harlan	4	1	3	4	4.2	1,050
Hayes	-	-	-	-	1.8	-
Hitchcock	1	-	1	1	4.3	4,300
Hooker	1	-	1	1	1.1	1,100
Howard	2	1	-	2	6.1	3,050
Johnson	4	1	2	4	5.8	1,450
Kearney	2	1	1	2	6.6	3,300
Keya Paha	-	-	-	-	1.5	-
Knox	7	3	2	6	12.6	2,100
Logan	-	-	-	-	1.0	-
Loup	-	-	-	-	1.0	-
McPherson	-	-	-	-	0.7	-
Merrick	4	1	3	4	8.2	2,050
Morrill	2	-	1	2	6.4	3,200
Nance	2	-	1	2	5.2	2,600
Pawnee	1	-	1	1	4.7	4,700
Perkins	1	1	-	1	3.9	3,900
Pierce	2	1	1	2	8.3	4,150
Polk	7	2	4	6	6.8	1,133
Rock	1	1	-	1	2.4	2,400
Seward	8	4	3	6	13.7	2,283
Sheridan	3	1	1	3	8.8	2,933

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Nebraska, By Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city under 2,500 (cont'd.)						
Sherman	2	1	1	1	4.9	4,900
Sioux	-	-	-	-	2.4	-
Stanton	1	1	-	1	5.4	5,400
Thayer	2	-	1	2	8.4	4,200
Thomas	-	-	-	-	1.0	-
Thurston	2	1	1	2	6.6	3,300
Valley	4	-	3	4	6.1	1,525
Webster	3	-	1	3	5.6	1,867
Wheeler	-	-	-	-	1.1	-

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2/ Nebraska counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's--Omaha and Sioux City--statistics are presented only for dentists located in the Nebraska portions.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN NEVADA

During the 1965 registration period, 242 dentists registered with the Nevada Board of Dental Examiners (Table 1). The survey questionnaire was completed by 192 dentists, or 79 percent of all those registering. For dentists not responding to the survey, certain items of information, such as state and county location, dental school attended, and age, were obtained either from records maintained by the Nevada Board of Dental Examiners or from the 1966 American Dental Directory published by the American Dental Association. This report includes information for both respondents and nonrespondents unless otherwise indicated. (See Appendix Table A.)

Table 1.--Location and Military Status of Dentists Licensed in Nevada

Location and military status	All dentists	Percent of dentists
Total licensed	242	100
Respondents	192	79
Nonrespondents	50	21
Total licensed	242	100
Civilians in Nevada	177	73
Respondents	140	-
Nonrespondents	37	-
Civilians in another state	57	24
On active duty with armed forces	8	3

Only 73 percent of the 242 dentists licensed in Nevada are civilians actually located in the State. Almost one-fourth of the registered dentists are civilians located in other states, and three percent are on active duty in the armed forces. About two-fifths of the 57 out-of-state civilian dentists reside in California, another one-fifth are located in Utah, and the remainder are scattered among 14 other states.

Civilian Dentists in Nevada

Sources of Supply

Dental schools.--More than one-half (54 percent) of Nevada's 177 dentists are graduates of 14 schools located in the North Central States (Table 2). Major contributors among these schools are Northwestern, Marquette, Washington, and Loyola Universities, having together trained one of every four dentists in the State. Other schools in this part of the Country to contribute as many as six of Nevada's dentists are St. Louis University and the Universities of Missouri (Kansas City), Nebraska, and Minnesota.

Table 2.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation		
		All years	After 1955	1955 or earlier
Total number	177[1]	177	83	93
		(Percent distribution by school)		
North Central	95	54	63	45
Northwestern	18	10	11	9
Marquette	12	7	11	3
Washington (St. Louis)	10	6	7	4
Loyola (Chicago)	10	6	7	4
10 other schools	45	25	27	25
West	59	33	24	42
Southern California	18	10	7	13
Oregon	15	9	9	8
Pacific (Physicians & Surgeons)	11	6	2	10
California (San Francisco)	11	6	2	10
2 other schools	4	2	4	1
South and Northeast (17 schools)	23	13	13	13

[1] Includes one dentist for whom year of graduation is not available.

Another one-third of the State's dentists graduated from six schools located in Western States. Schools in California have contributed a large proportion of these dentists, led by the University of Southern California, which has supplied 10 percent of the dentist supply. Two other California schools, the University of the Pacific (Physicians and Surgeons) and the University of California (San Francisco), have each contributed about 6 percent of Nevada's dental force. Among schools in other Western States, the University of Oregon is the major contributor, having trained 9 percent of the State's dentists. Seventeen schools located in the South and Northeast regions of the Nation have provided the remaining 13 percent of the dentists in Nevada.

Over the years there has been a notable change in the source of Nevada's dentists. Traditionally, schools in the North Central States and the West have contributed about equally to the dental force. Since 1955, however, schools in the West have shown a rather marked decrease in the proportion they have contributed and schools in the North Central States have shown an increase to the point where North Central schools have contributed well over twice as many dentists as have schools in the West during this period.

Dentists relocating in Nevada.--One-fourth of the dentists responding to the survey reported practicing as a civilian in another state immediately prior to assuming their present location in Nevada. The adjacent states of California, Utah and Idaho have together contributed 15 dentists, or about two-fifths of the 35 in-migrants. The remaining 20 dentists have come from 12 more distant states. Dentists coming to Nevada from other states have, on the whole, located in Nevada rather recently. Nearly three-quarters of the in-migrant dentists have come to Nevada since 1950 and about two-fifths moved to the State during the 1960's.

Personal Characteristics

Age.--The dentists in Nevada represent a relatively young group with a median age of 39.4 years (Table 3). Almost one-third of the dentists are under 35 years of age, and another 37 percent are between the ages of 35 and 44. In contrast, only 11 percent are 60 years old or over.

Table 3.--Age Distribution

Age	Number of dentists	Percent of dentists	Cumulative percent
Total	177[1]	100	-
Under 30	13	7	7
30 - 34	44	25	32
35 - 39	35	20	52
40 - 44	30	17	69
45 - 49	17	10	79
50 - 54	12	7	86
55 - 59	5	3	89
60 - 64	11	6	95
65 & over	9	5	100

[1] Includes one dentist for whom age is not available.

Advanced training.--Almost one-fifth of the 140 responding dentists have completed one year or more of advanced training. The percentage of dentists in Nevada who completed clinical training about equals the percentage who completed graduate or postgraduate academic work. Eight percent have had advanced clinical training as an intern or resident and 7 percent have earned a master's degree or completed at least one year of postgraduate study. Another 4 percent reported completion of both clinical and academic training.

Multiple licensure.--Eighty percent of the responding dentists located in Nevada hold more than one license to practice dentistry, including 53 percent who are licensed in one state in addition to Nevada, 21 percent in two other states, and 6 percent in three or more other states. Approximately one-half of the dentists holding out-of-state licenses are licensed to practice in California, 17 percent in Utah and 11 percent in Oregon. Nevada dentists are also licensed to practice in 22 additional states.

Distribution and Current Status

Distribution of dentists.--A large proportion of Nevada's dentists, about 85 percent, are located in Clark and Washoe Counties, the two counties that comprise the metropolitan areas of Las Vegas and Reno, respectively (Table 4). The Las Vegas area, with 46 percent of Nevada's dentists, has a slightly larger proportion than does the

Table 4.--Distribution by County Group

County group	Number of counties	Number of dentists	Percent of dentists
All counties	17	177	100
All metropolitan areas[1]	2	151	85
Las Vegas area	1	81	46
Reno area	1	70	39
Nonmetropolitan county groups[2]	15	26	15
Central city 5,000-9,999	2	12	7
Central city 2,500-4,999	4	9	5
Central city under 2,500	9	5	3

[1] Standard Metropolitan Statistical Areas as established by the U.S. Bureau of the Budget, Office of Statistical Standards.

[2] Counties not included within a SMSA, grouped according to the 1960 population of the largest (central) city within each county.

Reno area with 39 percent. The remaining 15 percent of the State's dentists are located in the 15 nonmetropolitan counties of the State.

Of the 26 dentists located in nonmetropolitan counties, 12 are located in the two counties with central cities of 5,000-9,999 population, 5 in Elko and 7 in Ormsby. Of the four counties with 2,500-4,999 persons in their central cities, Humboldt is the only county with as many as 3 dentists. The remaining three counties--Churchill, Mineral, and White Pine--have 2 dentists each. Only two of the nine counties with less than 2,500 persons in their central cities have dentists, Douglas County (3 dentists) and Lyon County (2 dentists). The remaining seven counties in this group--Esmeralda, Eureka, Lander, Lincoln, Nye, Pershing and Storey--have no civilian dentists according to available information.

There are differences in the age distribution of dentists between the two metropolitan areas, and between the metropolitan areas and the nonmetropolitan county groups. Dentists in the Reno metropolitan area, with a median age of about 41 years, are older as a group than their colleagues in the Las Vegas area, with a median age of 38. Almost four of every five dentists in the Las Vegas area are under 45 years of age, compared to three out of five in the Reno area.

The two metropolitan areas taken together have a younger group of dentists, on the average, than do the nonmetropolitan counties. Dentists in the metropolitan areas have a median age of 39, compared with a median age of 42 for the nonmetropolitan county groups combined. Furthermore, the proportion of dentists 55 years of age or older in the nonmetropolitan counties, one dentist in every four, is twice as great as the proportion of similar age in the metropolitan areas.

Active dentists in relation to population.--Based on available information, all but one of the 177 dentists in the State were professionally active at the time of the survey, resulting in a ratio of one active dentist for every 2,274 persons (Table 5). In metropolitan areas, the ratio is one dentist for every 2,127 persons compared to one for every 3,127 persons in nonmetropolitan counties. Furthermore, the ratios for the two metropolitan areas differ considerably. While the Las Vegas area has one dentist for every 2,635 persons, a ratio in excess of the State average, the Reno area has a more favorable ratio of 1,530 persons per dentist. Among the nonmetropolitan county groups there is a sharp increase in the persons-per-dentist ratio as the size of the central city decreases. The ratio is 1,942 in the two counties with a central city size of 5,000-9,999 persons while in the counties with fewer than 2,500 persons in their central cities, the ratio is 5,100.

Table 5.--Number of Persons per Active Dentist

County group	Professionally active dentists	Population[1]	Persons per dentist
All counties	176	400,300	2,274
All metropolitan areas	150	319,000	2,127
Las Vegas area	81	213,400	2,635
Reno area	69	105,600	1,530
Nonmetropolitan county groups	26	81,300	3,127
Central city 5,000-9,999	12	23,300	1,942
Central city 2,500-4,999	9	32,500	3,611
Central city under 2,500	5	25,500	5,100

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Among the eight nonmetropolitan counties known to have dentists, Douglas and Ormsby Counties have the most favorable ratios, with one dentist for every 1,500 and 1,529 persons, respectively. Humboldt County, with 2,167 persons per dentist, is the only other nonmetropolitan county with a ratio more favorable than the State average. The ratio for Elko County, one dentist for every 2,520 persons, slightly exceeds the average for the State. The remaining four counties in which dentists are located have ratios in excess of 3,000 persons per dentist. These counties are Mineral (3,300), Lyon (3,700), Churchill (4,800), and White Pine (4,900).

Professional Activity

Current employment.--Almost all, 96 percent, of the responding dentists in Nevada are engaged primarily in private practice; 95 percent are self-employed and 1 percent are employed by another dentist. Most of the dentists who are not in private practice work for a state or local health agency.

A small proportion of the dentists, 6 percent, reported that they were employed in a part-time dental activity in addition to their primary professional employment. These dentists reported a variety of secondary dental activities, most frequently employment in a government agency.

Activity last year.--All but 5 of the dentists reporting their professional activity during the previous year indicated that they provided care to patients. Dentists reporting time spent in patient care devoted an average of 47.1 weeks during the year to this activity and worked an average of 39.3 hours per week. About one dentist in every ten engaged in a professional activity other than patient care, usually taking advanced training.

Practice Characteristics

Limited practices.--Twenty-four dentists in Nevada, about one in six, reported that they limit their practice to a dental specialty. Seven of these dentists report specialization in orthodontics, five in pedodontics, four each in prosthodontics and periodontics, and two each in oral surgery and oral pathology. All but one of the dentists who reported limiting their practices are located in the State's two metropolitan areas. While one in every four dentists in the Reno area limits his practice, only one in every seven practitioners located in the Las Vegas area does so.

Use of auxiliaries.--About 19 of every 20 dental practitioners in Nevada (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 6). The vast majority of the practitioners, 90 percent, employ at least one auxiliary full time, while only 4 percent employ part-time auxiliaries exclusively. Dental assistants are the most frequently employed auxiliary--usually on a full-time basis. Approximately 88 percent of the practitioners employ an assistant, including 83 percent who do so full time. Secretaries or receptionists are employed by almost 50 percent of the dentists, and

Table 6.--Auxiliary Utilization by Dental Practitioners

Type of auxiliary	Dental practitioners 1/	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time personnel
Total	138	100	90	4
With one or more auxiliaries	130	94	90	4
With assistant	122	88	83	5
With hygienist	39	28	6	22
With laboratory technician	12	9	2	7
With secretary or receptionist	68	49	35	14
With other type of personnel	7	5	1	4
With no auxiliary	8	6	-	-

1/ Based on respondents only.

a majority of these dentists utilize at least one of them full time. Dental hygienists and laboratory technicians are much less frequently employed by dentists in Nevada than are assistants and secretaries, and they are more likely to be employed on a part-time basis. While 28 percent of the practitioners employ dental hygienists and 9 percent employ dental technicians, about four-fifths and three-fourths, respectively, of the dentists employing these personnel do so on a part-time basis.

July 1967.

Appendix Table A.--Summary Statistics for Nevada

	Total dentists	Responding dentists	Nonresponding dentists
Total dentists licensed in Nevada[1]	242	192	50
Civilian dentists in Nevada[2] -- (designated simply as "dentists" in text tables)	177	140	37
Professionally active dentists[3]	176	140	36
Dental practitioners[4]	-	138	-
In limited practice[5]	-	24	-
Located in Nevada last year:			
Reported professional activity[6]	-	122	-
Dentists providing patient care[7]	-	117	-
Reported time spent in patient care[8]	-	101	-
Civilian dentists in another state	57	44	13
Dentists on active duty in armed forces	8	8	-

1/ Data for nonresponding dentists were obtained from the Nevada Board of Dental Examiners and from the 1966 American Dental Directory published by the American Dental Association.

2/ All dentists who currently work in Nevada (excluding those in the armed forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 1, age - 1.

3/ All active civilian dentists currently in Nevada--excludes 1 dentist who is fully retired.

4/ All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

5/ Dentists who reported they limited their practice to a dental specialty.

6/ Dentists located in Nevada last year who indicated type(s) of activity in which they engaged.

7/ All responding dentists who engaged in patient care last year, either as a primary or a secondary activity.

8/ Dentists reporting both hours and weeks spent in patient care last year.

DENTISTS LICENSED IN NEW HAMPSHIRE

During the 1966 registration period, 508 dentists registered with the New Hampshire Dental Board. Of these dentists, 60 percent are civilians located in New Hampshire, 35 percent are civilians located in other states, and 5 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in New Hampshire

Location and military status	All dentists	Percent of dentists
Total licensed	508	100
Respondents	473	93
Nonrespondents	35	7
Total licensed	508	100
Civilians in New Hampshire	305	60
Respondents	280	-
Nonrespondents	25	-
Civilians in another state	178	35
On active duty with Armed Forces	25	5

The survey questionnaire was completed by 473 dentists, 93 percent of all those registered. Data provided by the survey respondents have been supplemented, when obtainable, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the New Hampshire Dental Board or from the 1967 American Dental Directory, published by the American Dental Association.

Among the survey respondents, approximately two of every three hold licenses to practice dentistry in one or more other states. About 47 percent of the dentists located in New Hampshire hold more than one license, with 36 percent licensed in one other state and 11 percent licensed in two or more other states. Multiple licensure is much more common among dentists who are not located in New Hampshire but maintain a license in the State; 34 percent hold two or more licenses in addition to their New Hampshire license.

PROFESSIONAL TRAINING

Three-fifths of New Hampshire's dentists are graduates of the two New England dental schools at Tufts University and Harvard University. Through the years Tufts University has been the primary source of New Hampshire's dentists, and its contribution has steadily increased since World War II. Harvard's relative contribution to the New Hampshire supply, on the other hand, has declined greatly during the post-war years.

Graduates of 11 other eastern dental schools in Maryland, Pennsylvania, the District of Columbia, New York and New Jersey account for another 26 percent of the dentists in New Hampshire. Among these schools, the University of Maryland and Georgetown University have been the primary contributors. However, the role of Maryland as a source of supply has declined through the years, while that of Georgetown has shown a considerable increase.

Another 6 percent of the State's dentists are graduates of dental schools located in Illinois, primarily Loyola University of Chicago. The remainder of New Hampshire's dentists received their dental education in 12 schools located in 10 other states and Canada.

Dental School Attended and Year of Graduation for Dentists in New Hampshire

Dental school	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	305*	-	86	117	97
		(Percent distribution by school)			
Tufts	154	50	55	51	46
Harvard	29	10	1	8	20
Maryland	23	8	3	9	9
Georgetown	17	6	10	6	1
Loyola (Chicago)	13	4	6	5	2
22 other schools	66	22	25	21	22

* Dental school attended not available for 3 dentists and year of graduation for 5 dentists. Percents based on known totals.

More than one-fifth of the 280 in-state survey respondents, 60 dentists, reported that they had completed one year or more of advanced training after receiving the dental degree. Forty-six dentists have received advanced clinical training as interns or residents, and 26 have completed at least one year of advanced academic work as graduate or postgraduate students. Twelve dentists had completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Almost three-fifths (59 percent) of the licensed dentists in New Hampshire are located in only 3 of the State's 10 counties. Hillsborough County, which contains most of the Manchester metropolitan area, has the largest number of dentists, 32 percent of the State's supply. Thirteen percent of the dental force is located in Merrimack County, which contains the small remaining portion of the Manchester metropolitan area. A similar percentage is located in Rockingham County, which contains the New Hampshire fragment of the interstate Lawrence-Haverhill metropolitan area.

Distribution of New Hampshire Dentists, by County

County	Number of dentists	Percent of dentists
All counties	305	100
Hillsborough*	98	32
Rockingham*	44	14
Merrimack*	40	13
Strafford	31	10
Grafton	26	9
Cheshire	20	7
Belknap	14	5
Sullivan	13	4
Coos	10	3
Carroll	9	3

* Contains a portion of a Standard Metropolitan Statistical area, as defined by the U.S. Bureau of the Budget, Office of Statistical Standards.

Of the seven other counties, which are entirely nonmetropolitan in character, Strafford County, with 10 percent of the State supply, has the largest number of dentists. Only two other counties, Grafton and Cheshire, have as many as 20 dentists, accounting for 9 percent and 7 percent of the total dental force, respectively. The remaining four counties--Belknap, Sullivan, Coos and Carroll--together have 15 percent of the State's dentist supply.

AGE DISTRIBUTION OF DENTISTS BY COUNTY

The median age of dentists in New Hampshire is 44.2 years. Almost one-fourth of the State's dentists are under 35, and 29 percent are between 35 and 44 years of age. On the other hand, a substantial proportion, 26 percent, are 55 or over. About 14 percent of the dentists (42) are at least 65 years of age, including 27 who have reached the age of 70.

Age Distribution of New Hampshire Dentists by County

County	Total	Age in 1965			
		Under 35	35-44	45-54	55 & over
All counties	305*	71	88	63	79
Hillsborough	98	25	28	19	23
Rockingham	44	14	17	9	4
Merrimack	40	11	11	8	9
Strafford	31	8	8	7	8
Grafton	26	4	6	6	10
Cheshire	20	5	4	3	8
Belknap	14	2	4	3	5
Sullivan	13	1	5	1	6
Coos	10	1	3	4	2
Carroll	9	-	2	3	4

* Includes 4 dentists for whom age is not available.

Dentists' ages vary considerably among individual counties. Hillsborough, Rockingham, and Merrimack have the youngest groups of dentists, with median ages of 41 to 43 years. Moreover, some 27 percent of the dentists in these counties are under the age of 35, and only one-fifth are 55 years of age or older. In contrast, dentists in Grafton and Carroll Counties average at least seven years older, with median ages exceeding 50 years. Only 11 percent of the dentists in these two counties combined are under 35 years old, while 40 percent have reached the age of 55.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 305 dentists in New Hampshire, 284, or 93 percent, are active in their profession, giving New Hampshire one professionally active dentist for every 2,242 persons. Individual county ratios range from a relatively favorable count of one dentist for every 1,913 persons in Carroll County to a considerably less favorable ratio of 3,640 persons per dentist in Coos County.

Number of Persons per Active Dentist in New Hampshire

County	Professionally active dentists	Population*	Persons per dentist
All counties	284	636,600	2,242
Hillsborough	94	191,000	2,032
Rockingham	42	109,900	2,617
Merrimack	36	70,700	1,964
Strafford	27	62,200	2,304
Grafton	24	49,000	2,042
Cheshire	18	45,000	2,500
Belknap	13	29,200	2,246
Sullivan	12	27,900	2,325
Coos	10	36,400	3,640
Carroll	8	15,300	1,913

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In addition to Carroll, only one other county--Merrimack--has a ratio under 2,000. Hillsborough and Grafton Counties have the next most favorable ratios--2,032 and 2,042, respectively. Belknap County, with one dentist for every 2,246 persons, has a ratio approximately equal to the State average. Strafford and Sullivan Counties have ratios just over 2,300 persons per dentist, slightly less favorable than the State average, while Cheshire and Rockingham Counties have ratios of 2,500 and 2,617, respectively.

UTILIZATION OF AUXILIARIES

Eight out of every ten responding dental practitioners in New Hampshire (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 72 percent of all practitioners, including 66 percent who employ at least one assistant on a full-time basis. Almost one-third of the practitioners employ dental hygienists, most often on a part-time basis. Secretaries or receptionists are employed by 24 percent of the practitioners, with about four-fifths of these dentists utilizing such personnel full time. Only 5 percent employ laboratory technicians in their practices.

New Hampshire Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	256*	100	75	6
One or more auxiliaries	202	81	75	6
Assistant	180	72	66	6
Hygienist	81	32	12	20
Laboratory Technician	12	5	1	4
Secretary or receptionist	59	24	19	5
Other type of personnel	9	4	3	1
No auxiliary	48	19	-	-

* Includes 6 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist, and tends to be more frequent among younger dentists. Ninety percent of New Hampshire dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 76 percent among dentists 45 to 64 years old and to only 43 percent among dentists 65 and over. Young dentists who are just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age, and of hygienists, until age 35.

One-fifth of the dental practitioners in New Hampshire reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, 30 percent indicated a need for full-time hygienists, and 20 percent reported vacancies for full-time dental assistants.

OTHER SURVEY FINDINGS

☐ Ninety-seven percent of the responding active dentists in New Hampshire are primarily engaged in private practice, with 96 percent self-employed and one percent employed by another dentist. The remaining 3 percent are either employed by a governmental agency or are engaged in other dental activities, such as taking advanced training.

☐ Dentists reporting on time spent in providing patient care devoted an average of 39.6 hours per week to this activity for 47.4 weeks during the year preceding the survey. One in every nine dentists worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ About 8 percent of the responding practitioners reported that they limit their practice to a dental specialty, primarily to oral surgery or orthodontics.

☐ More than one-third of the 473 responding dentists who hold licenses in New Hampshire are located in another state. Eighty-four percent of these out-of-state dentists are currently located in the neighboring states of Massachusetts, Maine, Vermont, Connecticut, or New York.

☐ About one in every eight out-of-state dentists reported that they had been professionally active in New Hampshire immediately prior to assuming their present location. Fifteen of these 21 out-migrant dentists are located in the three adjacent states--Massachusetts, Vermont and Maine.

June 1968.

DENTISTS LICENSED IN NEW JERSEY

During the 1965 registration period, 5,604 dentists registered with the New Jersey State Board of Dentistry. Three-fourths of the registered dentists were civilians located in New Jersey, another 20 percent were civilians located in other States, primarily New York, Pennsylvania, and Delaware, and 5 percent were on active duty in the Armed Forces.

Location and Military Status of Dentists
Licensed in New Jersey

Location and military status	All dentists	Percent of dentists
Total licensed	5,604	100
Respondents	5,148	92
Nonrespondents	456	8
Total licensed	5,604	100
Civilians in New Jersey	4,185	75
Respondents	3,873	-
Nonrespondents	312	-
Civilians in another State	1,131	20
On active duty with Armed Forces	278	5
Not reported	10	*

* Less than one-half of one percent.

The survey questionnaire was completed by 5,148 dentists, 92 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the New Jersey State Board of Dentistry or from the 1966 American Dental Directory published by the American Dental Association.

PROFESSIONAL TRAINING

More than four-fifths of New Jersey's dentists are graduates of 10 dental schools located in 3 eastern states--Pennsylvania, New York, Maryland--and the District of Columbia. Two dental schools in Pennsylvania, Temple University and the University of Pennsylvania, which have between them graduated 44 percent of the dentists in New Jersey, have long been the primary sources of the State's dentist supply. The dental schools of New York and Georgetown Universities and the University of Maryland have also been major contributors of dentists to New Jersey, New York University alone supplying one of every eight dentists in the State. New Jersey's two new dental schools at Fairleigh Dickinson University and the New Jersey College of Medicine and Dentistry have together supplied 5 percent of the State's dentists. The remaining 13 percent of the dentists were trained in 33 other dental schools scattered among 21 states.

School Awarding Dental Degree, By Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	4,185[1]	-	1,042	1,355	1,693
		(Percent distribution by school)			
Temple	906	22	25	25	17
Pennsylvania	902	22	19	22	23
New York	516	12	12	13	12
Maryland	464	11	6	9	16
Georgetown	254	6	6	7	5
Columbia	182	4	3	4	6
Fairleigh Dickinson	116	3	11	-	-
Tufts	81	2	2	2	2
New Jersey College	79	2	7	-	-
Pittsburgh	79	2	1	2	2
Howard	79	2	2	3	1
34 other schools	512	12	6	13	16

[1] Dental school attended not available for 15 dentists and year of graduation for 95 dentists. Percents based on totals for whom the data are known.

While the proportionate contribution of the various schools has remained relatively constant through the years, the growing role of New Jersey's new dental schools in supplying dentists for the State has recently

PROFESSIONAL TRAINING (cont'd.)

affected the relative contribution of other schools. Although their first classes were not graduated until 1960, the new schools in New Jersey have already become substantial sources of dentist supply. Their graduates account for 37 percent of the dentists in the State who have completed their dental education in the years since these schools produced their first graduating classes. At the same time, the proportion has declined somewhat among the five schools which have traditionally been the major contributors--Temple, Pennsylvania, New York, Maryland and Georgetown--with these schools accounting for about one-half of the dentists who are graduates of the years since 1960 compared to three-fourths of those graduated prior to that time.

Almost a third of the survey respondents, or 1,240 dentists, reported they had completed one year or more of advanced training beyond receipt of the dental degree. Of the 974 dentists with advanced clinical training, 186 completed a residency and 788 an internship. Among the 474 dentists who reported advanced academic training, 161 earned a master's or other advanced degree, and another 313 received no additional degrees but completed one or more years of postgraduate study. These figures include 208 dentists who completed both academic and clinical training.

Advanced Training

Highest level of advanced training completed	Number of dentists	Percent of dentists
Total respondents	3,873	100
With advanced training	1,240	32
Clinical training only	766	20
Academic training only	266	7
Both clinical and academic training	208	5
With no advanced training	2,633	68

There is a growing tendency for young dentists to seek additional training beyond the dental degree, particularly advanced academic work. About 18 percent of the dentists under 40 years of age have had a year or more of graduate or postgraduate study as compared with 13 percent of those 40 to 54 years old and only 6 percent of those 55 and over.

DISTRIBUTION OF DENTISTS

More than four-fifths of the licensed dentists in New Jersey are located in the 8 metropolitan areas of the State. The Newark area alone has over 1,400 dentists, about one-third of all the dentists in the State. The Paterson-Clifton-Passaic metropolitan area is the location of another 933 dentists, 22 percent of the State's supply. The New Jersey portion of the Philadelphia area, containing the city of Camden, and the Jersey City area have the third and fourth largest dental forces, each accounting for about 9 percent of New Jersey's dentists. The Trenton and Atlantic City areas taken together account for only 6 percent of the dentist supply.

Distribution by Area

Area	Number of counties	Number of dentists	Percent of dentists
All counties	21	4,185	100
All metropolitan areas*	13	3,413	82
Newark area	3	1,409	34
Paterson-Clifton-Passaic area	2	933	22
Philadelphia, Pa. area - N.J. part	3	381	9
Jersey City area	1	369	9
Trenton area	1	179	4
Atlantic City area	1	99	2
Allentown-Bethlehem-Easton, Pa. area - N.J. part	1	24	1
Wilmington, Del. area - N.J. part	1	19	1
Nonmetropolitan counties*	8	772	18
Monmouth County	1	240	6
Middlesex County	1	233	5
Other counties	6	299	7

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Less than 20 percent of the dentists are located in the 8 nonmetropolitan counties. Some of these counties, however, have fairly large numbers of dentists. Of the State's 772 dentists in nonmetropolitan counties, 240, or almost one-third, are located in Monmouth County and another 233 dentists are located in Middlesex County. The counties of Somerset, Ocean and Cumberland each have between 50 and 100 dentists, and the remaining three counties, Sussex, Cape May and Hunterdon, have between 20 and 30 dentists.

AGE OF DENTISTS

With slightly more than one-half of the dentists under 47 years of age, the median age of dentists in New Jersey is 46.6 years. Only 21 percent of the State's dentists are under 35, but almost one-third are 55 years of age or older. About one in every eight, or 500 dentists, are 65 years old or over, and 217 have reached the age of 70.

Age Distribution

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	4,185[1]	100	-
Under 30	290	7	7
30 - 34	592	14	21
35 - 39	539	13	34
40 - 44	505	12	46
45 - 49	452	11	57
50 - 54	456	11	68
55 - 59	459	11	79
60 - 64	354	9	88
65 - 69	284	7	95
70 - 74	134	3	98
75 and over	83	2	100

[1] Age not available for 37 dentists. Percents based on total for whom age is known.

There are marked differences in the median ages of dentists in the metropolitan areas and in the nonmetropolitan counties. Among the metropolitan areas, the Jersey City area has the oldest dentists, with a median age of 55, about 5 years above the median in the Atlantic City area, which has the next oldest dentists. In contrast, dentists in the New Jersey portion of the Philadelphia area are young as a group, with a median age of 43 years. Dentists in the nonmetropolitan counties have a median age of 44 years compared to 47 years for those in all metropolitan areas combined. Among the individual nonmetropolitan counties, the median ages range from 49 years in Cumberland and Sussex Counties to a low of 39 years in Somerset County.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 4,185 dentists in New Jersey, 4,069, or 97 percent, are active in their profession, giving New Jersey one professionally active dentist for every 1,634 persons. There is one dentist for every 1,561 persons in the metropolitan areas, while the remainder of the State has a slightly less favorable ratio of one dentist for every 1,955 persons.

Number of Persons Per Active Dentist

Area	Professionally active dentists	Population	Persons per dentist
All areas	4,069	6,648,100	1,634
All metropolitan areas	3,314	5,171,700	1,561
Newark area	1,362	1,815,100	1,333
Paterson-Clifton-Passaic area	907	1,332,600	1,469
Philadelphia, Pa. area - N.J. part	373	845,100	2,266
Jersey City area	359	595,700	1,659
Trenton area	175	281,600	1,609
Atlantic City area	95	170,500	1,795
Allentown-Bethlehem-Easton, Pa. area - N.J. part	24	67,700	2,821
Wilmington, Del. area - N.J. part	19	63,400	3,337
Nonmetropolitan counties	755	1,476,400	1,955
Monmouth County	238	382,000	1,605
Middlesex County	229	508,500	2,221
6 other counties	288	585,900	2,034

Among the metropolitan areas, Newark has the best ratio, with one dentist for every 1,333 persons. The persons-per-dentist ratio for Paterson-Clifton-Passaic, 1,469, is only slightly less favorable. Jersey City and Trenton have ratios very close to the State average, 1,659 and 1,609, respectively, while Atlantic City, with one dentist for every 1,795 persons, has a ratio that somewhat exceeds the State average. The remaining three metropolitan areas, all of which are outlying counties of larger interstate metropolitan areas, have persons-per-dentist ratios in excess of 2,200.

Among the nonmetropolitan counties of the State, only Monmouth County, with one dentist for every 1,605 persons, has a ratio as favorable as the State average. Ocean and Somerset Counties have ratios of about 1,800 persons per dentist, a little above the average for the State. The remaining five nonmetropolitan counties, Middlesex, Cumberland, Sussex, Cape May and Hunterdon, all have more than 2,000 persons for every active dentist.

UTILIZATION OF AUXILIARIES

About two-thirds of the responding dental practitioners in New Jersey (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 59 percent of all practitioners, including 51 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 15 percent of the dentists with about two-thirds of these dentists utilizing such personnel full time. Only 9 percent of the dentists employ dental hygienists and 4 percent employ dental technicians. Dentists are more likely to employ hygienists and laboratory technicians on a part-time basis compared to other auxiliary personnel.

Dental Practitioners Employing Auxiliaries, By Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time personnel
Total	3,746[1]	100	57	9
With one or more auxiliaries	2,415	66	57	9
With assistant	2,178	59	51	8
With hygienist	326	9	4	5
With laboratory technician	148	4	2	2
With secretary or receptionist	560	15	10	5
With other type personnel	109	3	2	1
With no auxiliary	1,253	34	-	-

[1] Includes 78 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Eighty percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 61 percent among dentists 45 to 64 years old and drops to 36 percent among dentists 65 and over. Peak utilization of both hygienists and dental assistants occurs between the ages of 35 and 44.

OTHER SURVEY FINDINGS

***Ninety-seven percent of the responding professionally active dentists in New Jersey are primarily engaged in private practice. Another one percent are on the staffs of dental schools, and the remaining two percent are either employed by governmental agencies or are engaged in other dental activities, such as taking advanced training.

***At least one part-time dental activity in addition to their principal employment was reported by 20 percent of the dentists. Part-time teaching in a dental school was the most frequently reported secondary employment. Other types of secondary dental activity reported by the dentists include employment by another dentist and serving in school dental health programs.

***Dentists reporting time spent in providing patient care devoted an average of 39.5 hours per week to this activity for 47.7 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

***About 13 percent of the practitioners reported they limit their practices to a dental specialty, primarily to orthodontics or oral surgery. More than eighty percent of the dentists who reported limiting their practices are located in the State's metropolitan areas.

***Seven percent of the respondents, 271 dentists, practiced as a civilian dentist in one of 21 other states or the District of Columbia immediately prior to assuming their present New Jersey location. Nearly nine in every ten of these dentists came from the adjacent states of New York and Pennsylvania.

***Two-thirds of the 1,131 civilian dentists licensed in New Jersey but located in another state are in the adjacent states of New York, Pennsylvania or Delaware. The remaining out-of-state dentists are scattered among 37 other states, the District of Columbia or foreign countries.

October 1967.

APPENDIX TABLE

Selected Data on Dentists in New Jersey, by Location

Area and County	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
				Age in 1965				
	Total	Respond-ents	Non-respond-ents	Percent under 35	Percent 55 or more	Profes-sionally active		
All counties	4,185	3,873	312	21	32	4,069	6,648.1	1,634
All metropolitan areas 2/	3,413	3,154	259	20	33	3,314	5,171.7	1,561
Newark area	1,409	1,308	101	18	35	1,362	1,815.1	1,333
Essex	779	727	52	13	42	752	956.6	1,272
Morris	207	190	17	33	22	198	303.1	1,531
Union	423	391	32	20	29	412	555.4	1,348
Paterson-Clifton-Passaic area	933	870	63	23	27	907	1,332.6	1,469
Bergen	644	603	41	25	25	631	888.3	1,408
Passaic	289	267	22	19	33	276	444.3	1,610
Philadelphia, Pa. area - N.J. part	381	348	33	26	21	373	845.1	2,266
Burlington	100	94	6	34	12	99	266.5	2,692
Camden	228	203	25	25	24	223	433.1	1,942
Gloucester	53	51	2	17	25	51	145.5	2,853
Jersey City area	369	333	36	11	51	359	595.7	1,659
Hudson	369	333	36	11	51	359	595.7	1,659
Trenton area	179	167	12	20	28	175	281.6	1,609
Mercer	179	167	12	20	28	175	281.6	1,609
Atlantic City area	99	88	11	18	39	95	170.5	1,795
Atlantic	99	88	11	18	39	95	170.5	1,795
Allentown-Bethlehem-Easton, Pa. area - New Jersey part	24	24	-	17	29	24	67.7	2,821
Warren	24	24	-	17	29	24	67.7	2,821

APPENDIX TABLE (Cont'd.)

Selected Data on Dentists in New Jersey, by Location

Area and County	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965		Professionally active		
				Percent under 35	Percent 55 or more			
All metropolitan areas[2/] (Cont'd.)								
Wilmington, Delaware area - New Jersey part	19	16	3	5	32	19	63.4	3,337
Salem	19	16	3	5	32	19	63.4	3,337
All nonmetropolitan counties[3/]	772	719	53	29	27	755	1,476.4	1,955
Cape May	26	22	4	23	35	24	55.0	2,292
Cumberland	52	47	5	17	33	51	118.4	2,322
Hunterdon	24	22	2	21	38	23	59.8	2,600
Middlesex	233	221	12	27	24	229	508.5	2,221
Monmouth	240	225	15	32	28	238	382.0	1,605
Ocean	78	68	10	29	29	72	130.1	1,807
Somerset	92	89	3	35	23	92	166.2	1,807
Sussex	27	25	2	33	37	26	56.4	2,169

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[2/] New Jersey counties included in the latest 1967 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's statistics are presented only for dentists located in the New Jersey portion of the Philadelphia SMSA, Allentown-Bethlehem-Easton SMSA, and Wilmington SMSA.

[3/] Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget.

DENTISTS LICENSED IN NEW MEXICO

A total of 425 dentists registered with the New Mexico Board of Dental Examiners during the 1965 registration period (Table 1). The survey questionnaire was completed by 381 dentists, for an overall response rate of 90 percent. Of the responding dentists, only 255, or 67 percent, were civilians actually located in New Mexico. Civilians located in other States account for another 28 percent of the respondents, and an additional 4 percent were dentists on active duty in the Armed Forces. There were only two women dentists included among the respondents, both of them located within the State.

Table 1.--Location and Military Status of Dentists Licensed in New Mexico

Location and military status	All dentists	Percent of dentists
Total licensed	425	100
Respondents	381	90
Nonrespondents	44	10
Respondents	381	100
Civilians in New Mexico	255	67
Civilians in another State	108	28
On active duty with Armed Forces	16	4
Not reported	2	1

More than four out of every five dentists responding in the survey hold a license in at least one other State (Table 2). Multiple licensure is extremely common among dentists located in New Mexico. Three-fourths of the civilian in-State dentists are licensed in at least one additional State--60 percent in one other State and 15 percent in 2 or more other States. By comparison, 40 percent of the out-of-State civilian dentists hold licenses in 2 or more States in addition to their licenses in New Mexico and the State in which they are presently located.

Table 2.--Percent of Dentists Holding Licenses in Other States

Licenses held	All respondents	Civilian dentists		Armed Forces
		In New Mexico	Out-of-State	
Total	100	100	100	100
New Mexico only	18	25	-	25
Licensed in 1 other State	60	60	60	63
Licensed in 2 other States	17	13	28	6
Licensed in 3 or more other States	5	2	12	6

Civilian Dentists in New Mexico

Sources of Supply

Dental schools.--Graduates of 37 dental schools are represented among New Mexico's dentists, including 3 dental schools (Colorado College, San Francisco College of Medicine and Surgery, and Tulane University) which are no longer in existence. Well over one-half of the State's dentists are graduates of schools located in the North Central States (Table 3). The University of Missouri at Kansas City has made the largest single contribution, having trained almost one-fourth of all dentists in the State. Creighton and Indiana Universities, and Loyola University of Chicago have also made significant contributions. Another one-fourth of the dentists received their dental education in schools in the South. Among Southern schools, Baylor University has been the outstanding contributor, supplying 17 percent of the State's dentists. Schools in the West have contributed 12 percent of the dentist supply, with the University of Southern California the largest Western contributor. Dental schools in the Northeast account for only 5 percent of the total.

Table 3.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	255[1]	-	95	93	60
		(Percent distribution by school)			
North Central	146	58	54	54	69
Missouri (Kansas City)	56	23	30	14	20
Creighton	13	5	6	8	-
Indiana	11	4	1	2	14
Loyola of Chicago	9	4	2	2	8
Northwestern	8	3	3	3	3
Washington (St. Louis)	8	3	3	3	3
Marquette	8	3	1	7	2
8 other schools	33	13	8	15	19
South	64	25	29	29	14
Baylor	43	17	20	19	7
9 other schools	21	8	9	10	7
West	29	12	11	10	15
Southern California	8	3	1	7	-
6 other schools	21	9	10	3	15
Northeast	13	5	6	7	2

[1] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item. (See Appendix Table A.)

Both the University of Missouri at Kansas City and Baylor University have played an increasingly important role in recent years in supplying dentists for the State. Together, they account for half of all dentists in the State who have completed their dental education within the past ten years. By contrast, graduates of these schools make up only 27 percent of all dentists in the State who finished dental school in the years prior to World War II. The proportionate contribution of Indiana University and Loyola University of Chicago has decreased considerably over earlier years. Together these two schools account for 22 percent of all dentists graduated prior to World War II, but for only 3 percent of those graduated since 1955.

Dentists relocating in New Mexico.--Only about one out of five dentists (22 percent) presently in New Mexico reported previous professional locations as civilians in other States. One-fourth of these dentists who have migrated into New Mexico were previously located in Texas. Another 18 percent of the in-migrant dentists moved from 3 other adjacent States--Colorado, Oklahoma, and Arizona. Although dentists have come to New Mexico from 19 other States, most of these States account for only one dentist each, and none for more than 3.

Personal Characteristics

Age.--Dentists in New Mexico are relatively young--their median age in 1965 was only 42.0 years. Three-fifths of the State's dentists were under 45 years of age, including 26 percent who were under 35 (Table 4). Only 5 percent were 65 years old or over.

Table 4.--Age Distribution

Age	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	255	100	-
Under 30	19	8	8
30 - 34	44	18	26
35 - 39	41	17	43
40 - 44	41	17	60
45 - 49	34	14	74
50 - 54	16	7	81
55 - 59	17	7	88
60 - 64	16	7	95
65 - 69	8	3	98
70 & over	5	2	100

Advanced training.--One of every six dentists in New Mexico reported the completion of a year or more of advanced training (Table 5). About 8 percent of the State's dentists have taken clinical training. A larger proportion, or about 13 percent, have completed at least one year of advanced academic training, including 6 percent of the dentists who reported earning a master's degree since leaving dental school. Both clinical and academic training have been taken by about 5 percent of all dentists in the State.

Table 5.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
With advanced training	40	16
Clinical training only	8	3
Academic training only	21	8
Both clinical and academic	11	5
Clinical training		
Residency completed	9	4
Internship completed	10	4
Academic training		
M.A., M.S., or other advanced degree	14	6
Postgraduate 1 year or more (no degree)	18	7

Distribution and Current Status

Distribution of dentists.--The largest concentration of responding dentists in New Mexico is in the Albuquerque metropolitan area (Bernalillo County). More than two-fifths of the State's licensed civilian dental force is located in this single county (Table 6). The remaining 56 percent of the dentists in the State are located in nonmetropolitan counties. However, of the 31 nonmetropolitan counties in the State, 7 have no reporting dentists.

Table 6.--Distribution by County Group and Age in 1965

County group	Number of counties	Number of dentists	Percent of dentists				
			All ages	Under 35	35-44	45-54	55 & over
All counties	32	255	100	26	34	21	19
Albuquerque metropolitan area	1	113	44	27	34	20	19
Nonmetropolitan county group							
Central city 25,000-49,999	5	72	28	28	28	23	21
Central city 10,000-24,999	6	40	16	23	44	20	13
Central city 5,000-9,999	7	20	8	16	42	26	16
Central city under 5,000	13	10	4	33	23	11	33

If the nonmetropolitan counties are grouped according to the population of the largest (central) city within each county, the number of dentists in a county generally declines as the population of the central city decreases (see Appendix Table B). Of the 5 counties with central cities of 25,000-49,999 population, Santa Fe is the only county with more than 20 dentists. The remaining 4 counties--Chaves, Dona Ana, Eddy, and Lea--have between 10 and 14 dentists. In the 6 counties with central cities of 10,000-24,999 population, only Curry and San Juan Counties have 10 or more dentists, while each of the other 4 counties in this group has less than 6 reporting dentists. Among the 7 counties with 5,000-9,999 persons in their central cities, only San Miguel has as many as 5 dentists. The majority of the 13 counties in the smallest size category (counties with central cities of under 5,000 inhabitants) have no reporting dentists at all and those with licensed civilian dentists have 3 or fewer dentists per county.

As the data in Table 6 indicate, each of the county groups in New Mexico has a substantial representation of young dentists. In the Albuquerque metropolitan area, 61 percent of the dentists are under 45 years of age, including 27 percent who are under 35. Among the nonmetropolitan county groups, the one with central cities of 10,000-24,999 inhabitants had the youngest reporting dentists. Sixty-seven percent were under 45, and only 13 percent were 55 years old or over. Some variation exists in the age distribution of reporting dentists in the remaining county groups, but in all cases at least 56 percent were under the age of 45.

Active dentists in relation to population.--Of the 255 responding civilian dentists in New Mexico, 252 reported that they were professionally active at the time of the survey. Based on this count, there was one professionally active dentist for every 4,116 persons in New Mexico in 1965 (Table 7). By county size group, the number of persons per dentist in the nonmetropolitan areas range from 4,114 in the 5 counties with 25,000 or more persons in their central cities to 10,780 in the 13 counties with central cities of less than 5,000 residents. Among the 25 counties known to have dentists, Santa Fe County had the most favorable ratio, with one professionally active dentist for every 2,104 persons. At the opposite end of the scale, and differing by more than 10,000 persons, was Valencia County with a ratio of 13,367 persons per dentist (see Appendix Table C for individual county data).

Table 7.--Distribution of Professionally Active Dentists

County group	Professionally active dentists	Population	Persons per dentist
All counties	252	1,037,300	4,116
Albuquerque metropolitan area	110	310,500	2,823
Nonmetropolitan county group			
Central city 25,000-49,999	72	296,200	4,114
Central city 10,000-24,999	40	217,200	5,430
Central city 5,000-9,999	20	105,600	5,280
Central city under 5,000	10	107,800	10,780

As the map on the following page indicates, only 8 of the 25 counties with reporting dentists had dentist-population ratios as favorable as the State average of 4,116. The metropolitan county of Bernalillo ranked second in the State with a ratio of one dentist for every 2,823 persons, and Los Alamos County ranked third, with a ratio of one for every 3,060. The number of persons per dentist in the remaining 5 counties with better than average ratios ranged from 3,400 in Colfax County to 3,886 in Eddy County. One county--Lincoln--had a ratio (4,150 persons per dentist) that is only slightly higher than the State average. Of the remaining counties with reporting dentists, however, there were 8 counties with ratios in excess of one dentist per 8,000 persons. In addition to Valencia County, they included McKinley (8,320), Rio Arriba (8,567), Taos (8,650), Otero (8,675), Roosevelt (8,850), Socorro (10,330), and Quay (13,100).

The counties without reporting dentists are not necessarily without the services of a dentist. For example, Sandoval County, from which no active dentist reported, has an Indian population which accounts for more than 20 percent of its total inhabitants. Since dentists employed by the Federal Government in such agencies as the Division of Indian Health of the Public Health Service are not required to be licensed in the State in which they are assigned, there is every likelihood that the survey results underestimate the dental force available to the residents of this county. This is also true of some of the counties with reporting dentists. A case in point is McKinley County, with 5 reporting dentists serving a population of over 41,000. Since 28 percent of its residents are Indian, the dental force available to the community is undoubtedly greater than the survey figures indicate.

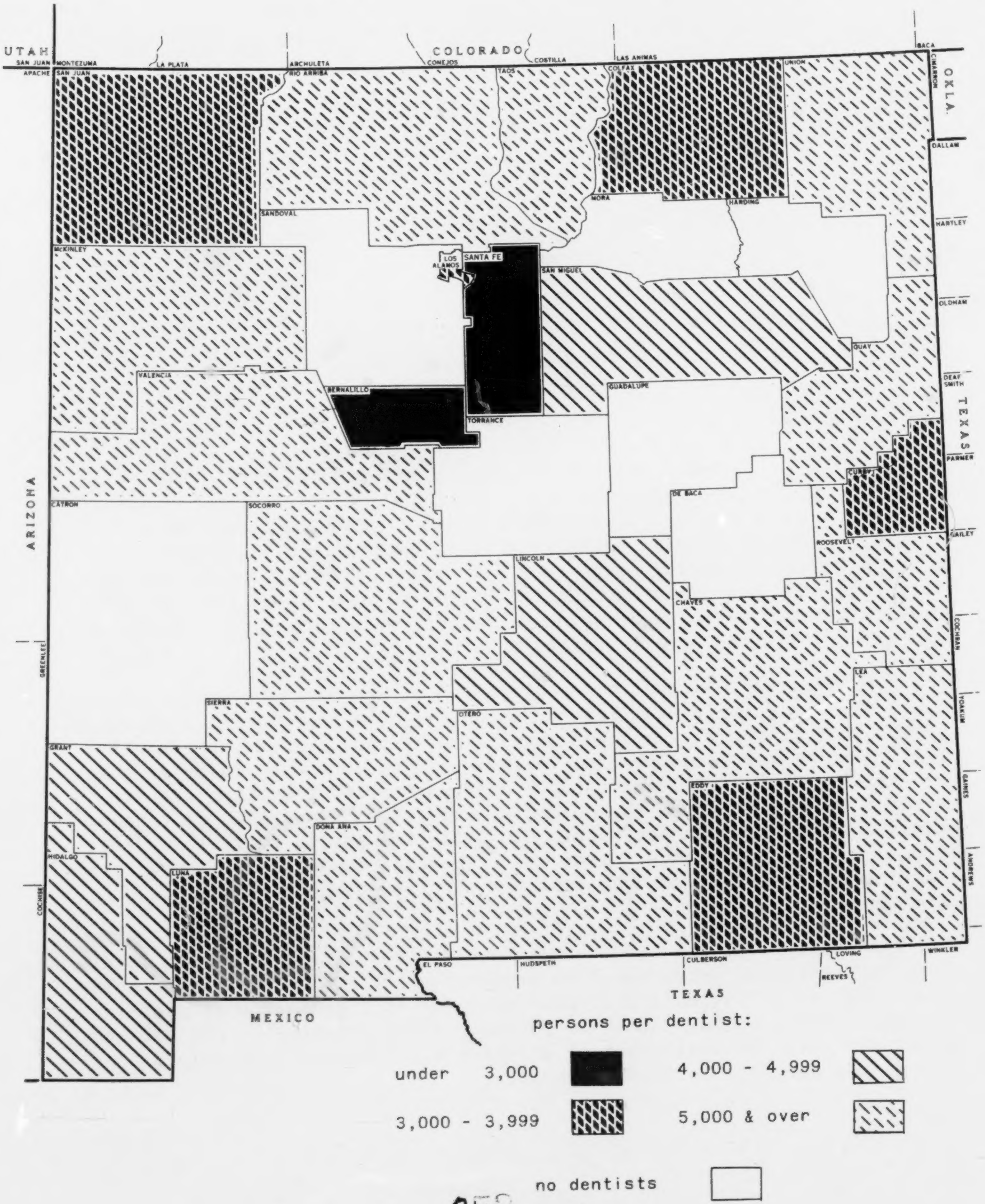
Professional Activity

Current employment.--As might be expected, self-employment predominates among dentists who are active in the profession. Of the 252 professionally active dentists located in New Mexico, 95 percent are primarily in private practice. The remaining 5 percent includes 2 percent who are primarily employed by other dentists, another 2 percent employed by a government agency, and one percent engaged in other dental employment.

Only 17 dentists, or 7 percent of those professionally active, reported a secondary dental employment. Nine of these dentists, seven of whom are located in Bernalillo County, engage in work with a voluntary agency as their secondary activity. Other dentists reported that they teach part time at the dental hygiene school in Albuquerque or work for a government agency.

Activity last year.--All but one dentist reporting on their professional activity in New Mexico last year indicated that they had provided care for patients. Dentists reporting on time spent last year in providing patient care devoted an average of 47.4 weeks to this activity and worked an average

POPULATION PER DENTIST IN NEW MEXICO BY COUNTY: 1965


UTAH
COLORADO
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ARIZONA
MEXICO
SAN JUAN
MONTEZUMA
LA PLATA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
BACA
CIMARRON
APACHE
RIO ARRIBA
TAOS
COLFAX
UNION
DALLAM
SANDOVAL
MORA
HARDING
HARTLEY
McKINLEY
LOS ALAMOS
SANTA FE
SAN MIGUEL
OLDHAM
QUAY
VALENCIA
BERNALILLO
TORRANCE
GUADALUPE
DEAF SMITH
CURRY
PARMER
CATRON
SOCORRO
DE BACA
ROOSEVELT
BAILEY
LINCOLN
CHAVES
COCHRAN
GREENLEE
LEA
YOAKUM
SIERRA
OTERO
GRANT
GAINES
EDDY
DONA ANA
HIDALGO
LUNA
ANDREWS
COCHISE
EL PASO
HUDSPETH
CULBERSON
LOVING
REEVES
WINKLER
persons per dentist:
under 3,000 ■
4,000 - 4,999 ▧
3,000 - 3,999 ▨
5,000 & over ▧
no dentists ☐

of 38.2 hours per week. The figures in Table 8 show that one-half of the reporting dentists spent at least 40 hours per week at this activity for 48 or more weeks during the year. Furthermore, almost one dentist in ten worked 48 or more hours per week for this number of weeks.

Table 8.--Time Spent in Patient Care Last Year

Weeks spent in patient care	Percent of dentists providing care	Percent distribution by work week				
		48 hours or more	41-47 hours	40 hours	35-39 hours	Under 35 hours
Total reporting time spent	100	10	14	38	22	16
50 weeks or more	44	6	8	18	7	5
48-49 weeks	32	3	3	12	8	6
40-47 weeks	19	1	2	6	6	4
Less than 40 weeks	5	-	1	2	1	1

Practice Characteristics

Limited practice.--Approximately 16 percent of the reporting dentists in New Mexico limit their practices to a dental specialty. Almost one-half of these dentists report their practices are limited to orthodontia. Fifty-nine percent of the dentists limiting their practices are located in the Albuquerque metropolitan area (Bernalillo County), where one in every five dentists reported limiting his practice. Specialization is even more common in Santa Fe County, however, where one-fourth of the dentists are limited practitioners.

Use of auxiliaries.--Almost nine out of ten of the dental practitioners report that they employ auxiliary personnel (Table 9). Dental assistants are the most frequently employed auxiliary. Eighty-six percent of all practitioners employ assistants, including 82 percent who employ at least one assistant on a full-time basis. Secretaries and receptionists are employed by 44 percent of the dentists, with about two-thirds of these dentists employing such personnel on a full-time basis. Only 16 percent of the dentists employ hygienists and 12 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Although dentists in the Albuquerque metropolitan area are no more likely to employ auxiliary personnel than are those located in the nonmetropolitan areas, the use of hygienists is much more common in this county than in the remainder of the State. About 24 percent of the dentists in the Albuquerque area report the employment of a hygienist, compared with only 11 percent of the dentists located elsewhere.

Table 9.--Auxiliary Utilization by Dental Practitioners

Type of auxiliary	Number of practitioners	Percent of practitioners
Total	248	100
With one or more auxiliaries	211	88
With assistant	206	86
With hygienist	39	16
With laboratory technician	28	12
With secretary or receptionist	106	44
With other type of personnel	10	4
With no auxiliary	28	12

The use of auxiliaries varies with the age of the dentist. Over 90 percent of the dental practitioners under age 55 employ some type of auxiliary. Among dentists 55 years of age and over, the proportion using auxiliaries drops to approximately 65 percent.

Almost one-fifth of the dental practitioners in New Mexico who are currently without auxiliaries report one or more vacant positions for auxiliary personnel. The proportion reporting one or more vacancies among dentists currently employing auxiliaries was 15 percent. More than half of all vacancies were for hygienists. Most dentists reporting a hygienist vacancy did not currently employ this type of auxiliary personnel.

Out-of-State Civilian Dentists

There are at least 108 civilian dentists in 27 other States who maintain licenses in New Mexico. More than one-third of these out-of-State dentists are located in the adjacent States--26 percent are in Texas and another 10 percent are in Arizona, Oklahoma, and Colorado. The remaining

Table 10.--Present Location of Out-of-State Civilian Dentists

Present location	Number of dentists	Percent of dentists
Total	108	100
Texas	28	26
California	18	17
Kansas	11	10
Missouri	6	5
23 other States	45	42

64 percent of the out-of-State respondents are located in 23 other States, primarily in California and Kansas. About one of every six out-of-State respondents reported they had formerly been professionally active in New Mexico. Nearly half of these out-migrant dentists are presently located in the neighboring State of Texas.

December 1966.

Appendix Table A.--Summary Statistics for New Mexico

	Number of dentists
All licensed dentists	425
Respondents -- total dentists participating in survey	381
(number not reporting current location or military status - 2)	
Civilian dentists in New Mexico[1] -- civilian respondents designated simply as "dentists" in text tables	255
(number not reporting: age - 14, dental school attended - 3, and year of graduation - 7)	
Professionally active dentists[2]	252
In limited practice[3]	37
Dental practitioners[4]	248
Located in New Mexico last year:	
Reported professional activity[5]	225
Dentists providing patient care[6]	224
Reported time spent in patient care[7]	191
Civilian dentists in another State	108
Dentists on active duty in Armed Forces	16
Nonrespondents -- licensed dentists not participating in survey	44

1/ All responding dentists who currently work in New Mexico (excluding those in the Armed Forces) or who are retired and currently live in the State.

2/ All active civilian dentists currently in New Mexico -- excludes 3 dentists who are fully retired.

3/ Dentists who reported they limit their practice to a dental specialty.

4/ All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

5/ Dentists located in New Mexico last year who indicated type(s) of activity in which they engaged.

6/ All dentists who engaged in patient care last year, either as a primary or secondary activity.

7/ Dentists reporting both hours and weeks spent in patient care last year.

Appendix Table B.--New Mexico Counties by County Group

Metropolitan Area[1/]

County	Number of responding civilian dentists
Albuquerque area	
Bernalillo	113

Nonmetropolitan Counties[2/]

County group	Central city	Number of responding civilian dentists
Central city 25,000-49,999		
Chaves	Roswell	13
Dona Ana	Las Cruces	12
Eddy	Carlsbad	14
Lea	Hobbs	10
Santa Fe	Santa Fe	23
Central city 10,000-24,999		
Curry	Clovis	10
Los Alamos	Los Alamos	5
McKinley	Gallup	5
Otero	Alamogorda	4
San Juan	Farmington	13
Valencia	Grants	3
Central city 5,000-9,999		
Colfax	Raton	4
Grant	Silver City	4
Luna	Deming	3
Quay	Tucumcari	1
Roosevelt	Portales	2
San Miguel	Las Vegas	5
Socorro	Socorro	1
Central city 2,500-4,999		
Hidalgo	Lordsburg	1
Sandoval	Bernalillo	-
Sierra	Truth or Consequences	1
Union	Clayton	1

Appendix Table B.--New Mexico Counties by County Group (continued)

Nonmetropolitan Counties[2/]

County group	Central city	Number of responding civilian dentists
Central city under 2,500		
Catron	Reserve	-
De Baca	Fort Sumner	-
Guadalupe	Santa Rosa	-
Harding	Roy	-
Lincoln	Ruidoso	2
Mora	Wagon Mound	-
Rio Arriba	Espanola	3
Taos	Taos	2
Torrance	Mountainair	-

1/ The Albuquerque area, including all of Bernalillo County, is defined as a Standard Metropolitan Statistical Area as established by the U.S. Bureau of the Budget, Office of Statistical Standards.

2/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

Appendix Table C.--Selected Data for New Mexico Counties

Counties with responding active dentists	Professionally active dentists	Population (in 000's)[1]	Persons per dentist	Number of active dentists		
				By age		Reporting use of auxiliaries
				Under 35 years	55 years or more	
All counties	252	1,037.3[2]	4,116	63	43	211
Bernalillo	110	310.5	2,823	29	18	90
Chaves	13	69.5	5,346	3	4	10
Colfax	4	13.6	3,400	1	1	3
Curry	10	37.4	3,740	4	2	10
Dona Ana	12	69.7	5,808	4	-	12
Eddy	14	54.4	3,886	5	3	11
Grant	4	18.4	4,600	-	-	4
Hidalgo	1	4.8	4,800	-	-	1
Lea	10	54.2	5,420	2	2	9
Lincoln	2	8.3	4,150	1	-	1
Los Alamos	5	15.3	3,060	1	-	5
Luna	3	10.4	3,467	1	-	3
McKinley	5	41.6	8,320	1	-	5
Otero	4	34.7	8,675	-	-	4
Quay	1	13.1	13,100	1	-	1
Rio Arriba	3	25.7	8,567	1	1	3
Roosevelt	2	17.7	8,850	-	-	2
San Juan	13	48.1	3,700	3	2	11
San Miguel	5	22.1	4,420	-	2	4
Santa Fe	23	48.4	2,104	5	5	18
Sierra	1	6.9	6,900	-	1	-
Socorro	1	10.3	10,300	-	-	-
Taos	2	17.3	8,650	-	1	1
Union	1	5.9	5,900	1	-	-
Valencia	3	40.1	13,367	-	1	3

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[1] Copyright 1965, Sales Management Survey of Buying Power; further reproduction is forbidden.

[2] Includes 38,900 persons in Catron, De Baca, Guadalupe, Harding, Mora, Sandoval and Torrance Counties which have no responding dentists.

DENTISTS LICENSED IN NEW YORK

During the 1966 registration period, 15,397 dentists registered with the New York State Board of Dental Examiners. A total of 14,929 dentists responded to the survey, 97 percent of those registered. A large proportion of the responding dentists, 87 percent, are civilians located in New York State, 10 percent are civilians located in other states, and approximately 3 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in New York

Location and military status	All dentists	Percent of dentists
Total	15,397	100
Respondents	14,929	97
Nonrespondents	468	3
Respondents	14,929	100
Civilians in New York	12,891	87
Civilians in another state	1,470	10
On active duty with Armed Forces	508	3
Not reported	60	*

*Less than one-half of one percent.

Multiple licensure is not too common among New York dentists. Less than one-fourth of all respondents hold a license to practice dentistry in one or more other states. Only 13 percent of the dentists located in New York hold more than one license, with 11 percent licensed in one other state and a mere 2 percent licensed in two or more other states. The proportion of out-of-state dentists holding multiple licenses is considerably greater; 25 percent hold two or more licenses in addition to their New York license.

Two-thirds of the licenses held outside of New York are held in adjacent states, including 28 percent in New Jersey, some 15 percent each in Pennsylvania and Connecticut, and approximately 9 percent in Massachusetts. An additional 10 percent of the licenses are maintained in California and Florida.

PROFESSIONAL TRAINING

Over three-fifths of New York's 12,891 dentists are graduates of in-state dental schools. New York University has made the largest contribution, over 4,700 dentists, or almost 40 percent of the total dental force. The two remaining in-state schools, Columbia University and the State University of New York at Buffalo, with considerably smaller contributions, have each trained approximately 12 percent of the dentists.

Dental School Attended and Year of Graduation for Dentists in New York

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	12,891 1/	-	2,523	4,658	5,705
		(Percent distribution by school)			
Schools in New York	8,038	63	62	54	69
New York University	4,739	37	39	34	38
Columbia	1,714	14	8	8	19
New York (Buffalo)	1,585	12	15	12	12
Schools located elsewhere	4,849	37	38	46	31
Pennsylvania	1,467	12	10	11	13
Georgetown	450	3	7	5	1
Tufts	443	3	4	2	4
Temple	296	2	3	4	1
Pittsburgh	253	2	1	5	*
Maryland	200	2	1	2	1
38 other schools	1,740	13	12	17	11

* Less than one-half of one percent.

1/ Dental school attended not available for 4 dentists and year of graduation for 5 dentists.

Schools in adjacent states have provided another one-fifth of New York's dentists. Among these schools, the University of Pennsylvania has been the principal contributor, supplying almost 1,500 dentists, or 12 percent of the total dental force. Two other Pennsylvania schools, Temple University and the University of Pittsburgh, have between them provided 4 percent of the dentist supply. More than 400 dentists, about 3 percent of the State's supply, were trained at Tufts University in Massachusetts.

Among the more distant schools, the largest contributors are Georgetown University in the District of Columbia and the University of Maryland, which have supplied 3 percent and 2 percent of the State's dentists, respectively. The only other schools to provide as many as 150 of New York dentists are three schools in the North Central States, St. Louis University, Western Reserve and Illinois. Approximately 180 New York dentists were trained in Canadian schools, principally McGill University.

PROFESSIONAL TRAINING (cont'd.)

Relatively few of New York's dentists are recent dental school graduates; only 20 percent of the dental force graduated from dental school after 1955. By comparison, more than 40 percent of the State's dentists were graduates during the years prior to World War II. The relative contribution of New York University and the State University at Buffalo have remained fairly constant through the years, while the proportion of Columbia University graduates has decreased considerably since World War II.

In New York a relatively high proportion of survey respondents--approximately one-third, or 4,160 dentists--reported that they had completed one year or more of advanced training after receiving their dental degrees. Of the 3,105 dentists with advanced clinical training, 592 completed a residency and 2,513 an internship. Among the 1,749 dentists who reported advanced academic training, 116 earned a second doctorate, 437 earned a master's degree and another 1,196 received no additional degrees but completed one or more years of postgraduate study. These figures include 694 dentists who completed both academic and clinical training.

Advanced Training Completed by New York Dentists

Highest level of training completed	Number of dentists	Percent of dentists
Total respondents	12,891	100
With advanced training	4,160	32
With no advanced training	8,731	68
Clinical training	3,105	24
Residency completed	592	5
Internship completed	2,513	19
Academic training	1,749	13
Ph.D., M.D., or other doctorate	116	1
M.A., M.S., or other master's degree	437	3
Postgraduate 1 year or more (no degree)	1,196	9

There is a growing tendency for young dentists to seek additional training beyond the dental degree. Twenty percent of all New York dentists under 40 years of age have a year or more of academic training as compared with 15 percent of those 40-54 years old and only 7 percent of those 55 and over. Residencies show the same pattern by age, but the trend varies somewhat with respect to internships. Twenty-one percent of the dentists under 40 years of age reported completion of an internship. This percentage is slightly lower than that recorded for dentists 40 to 54 years old, but is considerably greater than the 12 percent recorded for dentists 55 and over.

DISTRIBUTION OF DENTISTS

A very high percentage of all licensed dentists in New York--92 percent--are located within the State's seven metropolitan areas. The 9-county New York metropolitan area alone contains approximately three-fourths of the State's total dental force. Furthermore, one of every two dentists in the State (6,994 dentists) are actually located within the 5 boroughs of New York City--Manhattan, Brooklyn, Queens, Bronx and Richmond (Staten Island)--while another 2,613 dentists are found in the remaining 4 counties of the New York metropolitan area. Within New York City itself, approximately 4 of every 10 dentists are located in Manhattan, 3 in Brooklyn, 2 in Queens, and 1 in the Bronx (relatively few are located in Richmond). Among the other counties in the New York metropolitan area, Nassau County has the largest number of dentists, almost 1,200, followed by Westchester with more than 750 dentists.

Distribution of New York Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
Total	62	12,891	100
New York metropolitan area	9	9,607	75
New York City	5	6,994	54
Other counties	4	2,613	21
Other metropolitan areas	17	2,236	17
Buffalo area	2	778	6
Rochester area	4	509	4
Albany-Schenectady-Troy area	4	365	3
Syracuse area	3	300	2
Utica-Rome area	2	158	1
Binghamton area (N.Y. part)	2	126	1
Nonmetropolitan counties	36	1,048	8
Central city 25,000-49,999	9	550	4
Central city 10,000-24,999	13	310	3
Central city under 10,000	14	188	1

*See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Of the other metropolitan areas, Buffalo has the largest dental force, although it accounts for only 6 percent of the State supply. The next largest dental forces are found in the Rochester and the Albany-Schenectady-Troy areas, which account for 4 percent and 3 percent of the State's dentists, respectively. The remaining three metropolitan areas, Syracuse, Utica-Rome and Binghamton, together account for 4 percent of the dentist supply.

Only 8 percent of New York's dentists are located in the 36 nonmetropolitan counties of the State. More than one-half of these dentists are located in the 9 counties with central cities of 25,000 or more persons.

AGE DISTRIBUTION OF DENTISTS BY AREA

Dentists in New York have a rather high median age of 48.9 years. Only 25 percent, or 3,221, of the State's dentists are under 40 years of age, including just 16 percent who are under 35. On the other hand, well over one-third, or 4,568 dentists, are 55 years of age or older. About one in every six, or 2,037 dentists, are 65 years old or over, including 946 who have reached the age of 70.

Median Age and Age Distribution of New York Dentists, by County Group

County group	Median age	Percent of dentists		
		Under 40	40-54	55 & over
Total	48.9	25	40	35
New York metropolitan area	49.5	23	40	37
New York City (5 boroughs)	51.8	20	38	42
4 other counties	45.0	32	46	22
Other metropolitan areas	46.2	31	38	31
Buffalo area	47.4	29	35	36
Rochester area	44.6	37	35	28
Albany-Schenectady-Troy area	46.1	28	43	29
Syracuse area	44.5	32	44	24
Utica-Rome area	45.7	28	45	27
Binghamton area (N.Y. part)	47.5	32	36	32
Nonmetropolitan counties	48.5	26	39	35
Central city 25,000-49,999	47.0	29	39	32
Central city 10,000-24,999	49.8	22	39	39
Central city under 10,000	51.2	21	41	38

Some variation is to be found in the median ages of dentists in the individual metropolitan areas and in the nonmetropolitan county groups. Among the metropolitan areas, Rochester and Syracuse have the youngest dentists, with median ages of 44.6 and 44.5 years, respectively. The New York metropolitan area has the oldest dentists, with a median age of 49.5 years. Age differences among the components of this area, however, are even more pronounced. The median age of dentists in New York City is 51.8 years, with that of Manhattan Borough a high 54.4 years and the average of the remaining 4 boroughs 50.4 years. Dentists in the four other counties comprising the New York metropolitan area are considerably younger, with a median age of 45.0 years.

Dentist ages in nonmetropolitan counties tend to increase as the size of the central city declines. The median age of dentists in counties with central cities of at least 25,000 population is 47.0 years, compared to a median age of 49.8 years in counties containing a central city of 10,000-24,999 inhabitants and 51.2 years in counties with less than 10,000 persons in their central cities.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 12,891 responding dentists in New York, 12,427, or 96 percent, are active in their profession, giving New York one professionally active dentist for every 1,424 persons. There is one dentist for every 1,212 persons in the New York metropolitan area, while the remaining 6 metropolitan areas have a somewhat less favorable ratio of one dentist for every 1,904 persons and the nonmetropolitan counties have an even less favorable ratio of 2,334 persons per dentist.

Number of Persons per Active Dentist in New York State

County group*	Professionally active dentists	Population	Persons per dentist
Total	12,427	17,696,500	1,424
New York metropolitan area	9,252	11,216,600	1,212
New York City (5 boroughs)	6,716	7,829,900	1,166
4 other counties	2,536	3,386,700	1,335
Other metropolitan areas	2,162	4,115,900	1,904
Buffalo area	749	1,403,600	1,874
Rochester area	497	788,000	1,586
Albany-Schenectady-Troy area	350	691,400	1,975
Syracuse area	294	611,000	2,078
Utica-Rome area	153	354,100	2,314
Binghamton area (N.Y. part)	119	267,800	2,250
Nonmetropolitan county groups	1,013	2,364,000	2,334
Central city 25,000-49,999	530	1,071,800	2,022
Central city 10,000-24,999	302	848,800	2,811
Central city under 10,000	181	443,400	2,450

*See Appendix Table for individual county data.

New York City has a comparatively favorable ratio of 1,166 persons, while the other 4 counties in the New York metropolitan area have an average persons-per-dentist ratio of 1,335. Within New York City itself, Manhattan has a low ratio of 622, while the remaining 4 boroughs have ratios similar to each other, ranging between 1,444 and 1,671. Among the metropolitan areas exclusive of New York, Rochester has the best ratio, 1,586 persons per dentist, while the Utica-Rome area has the least favorable ratio of one dentist for every 2,314 persons. Ratio differences among individual counties within the metropolitan areas are more pronounced. For example, while the persons-per-dentist ratio in the 4-county Albany-Schenectady-Troy area is 1,975, the individual county ratios within the area range from 1,548 in Schenectady County to 3,856 in Saratoga County.

Among the 36 nonmetropolitan counties of the State, Dutchess County has the most favorable ratio, with one dentist for every 1,599 persons. In addition to Dutchess, 6 other counties have ratios under 2,000 persons per dentist. On the other hand, there are 16 counties with ratios over 2,500, including 8 with ratios in excess of 3,000 persons per dentist. By county grouping according to size of central city, the most favorable ratios are found in the 9 counties with more than 25,000 persons in their central cities.

UTILIZATION OF AUXILIARIES

Over three-fifths of the responding dentists in New York State reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 53 percent of all practitioners, including 43 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 19 percent of the dentists, with more than two-thirds of these dentists utilizing such personnel full time. Fourteen percent of the dentists employ dental hygienists, with half of these dentists utilizing such personnel on a full-time basis. Only 4 percent of the dentists employ laboratory technicians, principally for part-time assistance.

New York Dentists Employing Auxiliaries,
by Type of Auxiliary

Type of auxiliary employed by dentists	Dental practitioners	Percent of Dental Practitioners		
		Total	With one full-time auxiliary (or more)	With only part-time auxiliaries
Total	12,281[1/]	100	51	11
One or more auxiliaries	7,445	62	51	11
Assistant	6,312	53	43	10
Hygienist	1,718	14	7	7
Laboratory technician	541	4	1	3
Secretary or receptionist	2,190	19	13	6
Other type personnel	258	2	1	1
No auxiliaries	4,585	38	-	-

1/ Includes 251 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist and tends to be more frequent among younger dentists. Seventy-six percent of New York dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 59 percent among dentists 45 to 64 years old and to only 38 percent among dentists 65 and over. Young dentists who are just starting their practices do not reach peak utilization of assistants until they are 30 years of age and of hygienists until age 35.

Dentists in the New York metropolitan area are less likely to employ auxiliary personnel than are those located in the remainder of the State. Auxiliaries are employed by 59 percent of the dentists in the New York metropolitan area as compared to 71 percent of those in other areas of the State. In the New York metropolitan area one-half of the dentists employ an assistant and only 10 percent employ a hygienist. In contrast, three-fifths of the dentists located in the remainder of the State employ at least one assistant and 27 percent report employment of a hygienist.

OTHER SURVEY FINDINGS

- Ninety-five percent of the professionally active dentists in New York are primarily engaged in private practice, with 93 percent self-employed and 2 percent employed by another dentist. One percent of the dentists are on the staff of a dental school, and another 2 percent are employed by governmental agencies. The remaining 2 percent are engaged in other dental activities, such as taking advanced training.

- At least one part-time dental activity in addition to their principal employment was reported by 19 percent of the New York dentists. Part-time teaching in a dental school was the most frequently reported type of secondary employment, followed by employment in a State or local government agency. A variety of other secondary dental activities were reported, including employment by another dentist, and serving in voluntary agencies.

- Dentists reporting time spent in providing patient care devoted an average of 39.2 hours per week to this activity for 47.4 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

- About 11 percent of the practitioners reported they limit their practice to a dental specialty, primarily orthodontics or oral surgery. Other specialty areas frequently reported were periodontics, prosthodontics and endodontics. There is very little difference in the proportion of dentists limiting their practice in the New York metropolitan area and in the remainder of the State.

- Of the 1,470 dentists licensed in New York but located in another state at the time of the survey, one-third were in New Jersey and 28 percent were located in the other adjacent states of Connecticut, Massachusetts, Pennsylvania and Vermont. The remaining out-of-state dentists were located in 43 other states, predominantly California and Florida.

January 1968.

APPENDIX TABLE

Selected Data on Dentists in New York, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Percent under 40	Percent 55 or more			
All counties	12,891	25	35	12,427	17,696.5	1,424
Metropolitan areas 2/	11,843	25	35	11,414	15,332.5	1,343
New York area	9,607	23	37	9,252	11,216.6	1,212
New York City	6,994	20	42	6,716	7,829.9	1,166
Bronx	894	18	43	864	1,426.6	1,651
Kings (Brooklyn)	1,892	19	43	1,808	2,618.6	1,448
New York (Manhattan)	2,654	18	49	2,541	1,580.7	622
Queens	1,402	27	29	1,357	1,960.0	1,444
Richmond (Staten Island)	152	39	28	146	244.0	1,671
Other counties in New York area	2,613	32	22	2,536	3,386.7	1,335
Nassau	1,181	25	18	1,151	1,471.3	1,278
Rockland	155	49	23	147	171.0	1,163
Suffolk	509	49	19	497	845.3	1,701
Westchester	768	29	30	741	899.1	1,213
Buffalo area	778	29	36	749	1,403.6	1,874
Erie	677	29	37	651	1,144.1	1,757
Niagara	101	30	30	98	259.5	2,648
Rochester area	509	37	28	497	788.0	1,586
Livingston	20	30	30	19	45.8	2,411
Monroe	452	39	28	443	632.6	1,428
Orleans	14	14	57	13	36.3	2,792
Wayne	23	30	22	22	73.3	3,332

APPENDIX TABLE (Cont'd)

Selected Data on Dentists in New York, by Location

County group and county	Civilian dentists				Population (in 000's) [1]	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Percent under 40	Percent 55 or more			
Albany-Schenectady-Troy area	365	28	29	350	691.4	1,975
Albany	182	30	31	172	289.1	1,681
Rensselaer	53	25	23	51	148.0	2,902
Saratoga	26	27	27	25	96.4	3,856
Schenectady	104	27	29	102	157.9	1,548
Syracuse area	300	32	24	294	611.0	2,078
Madison	20	35	30	20	58.9	2,945
Onondaga	250	32	23	244	461.5	1,891
Oswego	30	33	27	30	90.6	3,020
Utica-Rome area	158	28	27	153	354.1	2,314
Herkimer	21	10	38	20	69.1	3,455
Oneida	137	31	25	133	285.0	2,143
Binghamton area (New York part)	126	32	33	119	267.8	2,250
Broome	114	32	32	108	226.4	2,096
Tioga	12	25	42	11	41.4	3,764
Nonmetropolitan counties [3]	1,048	26	35	1,013	2,364.0	2,334
Central City 25,000-49,999	550	29	32	530	1,071.8	2,022
Cayuga	33	24	33	31	75.9	2,448
Chautauqua	68	32	28	68	150.9	2,219
Chemung	54	37	31	51	103.3	2,025
Dutchess	127	34	33	122	195.1	1,599
Jefferson	41	34	29	39	89.2	2,287
Mongtomery	24	17	38	24	56.2	2,342
Orange	106	26	29	102	200.2	1,963
Tompkins	35	29	31	33	69.8	2,115
Ulster	62	21	37	60	131.2	2,187

APPENDIX TABLE (Cont'd)

Selected Data on Dentists in New York, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Percent under 40	Percent 55 or more			
Central City 10,000-24,999	310	22	39	302	848.8	2,811
Cattaraugus	35	20	49	35	81.5	2,329
Clinton	25	28	32	24	81.8	3,408
Columbia	19	21	32	19	49.3	2,595
Cortland	14	21	21	14	43.0	3,071
Franklin	18	17	56	18	44.6	2,478
Fulton	18	17	56	16	51.6	3,225
Genesee	20	35	30	20	57.2	2,860
Ontario	23	22	26	23	72.0	3,130
Otsego	23	26	39	22	52.4	2,382
St. Lawrence	35	23	43	34	119.1	3,503
Steuben	36	22	42	34	100.7	2,962
Warren	26	12	31	25	46.5	1,860
Washington	18	28	39	18	49.1	2,728
Central City 5,000-9,999	165	20	39	159	377.6	2,375
Allegany	14	29	50	14	43.9	3,136
Chenango	14	21	21	14	45.2	3,229
Delaware	18	17	44	16	43.1	2,694
Essex	20	15	45	19	35.4	1,863
Greene	18	17	39	17	32.5	1,912
Putnam	18	33	17	18	42.0	2,333
Seneca	15	27	13	15	33.3	2,220
Sullivan	24	17	58	24	47.4	1,975
Wyoming	13	15	38	12	35.8	2,983
Yates	11	9	64	10	19.0	1,900

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APPENDIX TABLE (Cont'd)

Selected Data on Dentists in New York, by Location

County group and county	Civilian dentists				Population (in 000's) 1/	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Percent under 40	Percent 55 or more			
Central City 2,500-4,999	21	29	29	20	61.5	3,075
Lewis	5	40	20	5	23.6	4,720
Schoharie	9	11	33	8	22.5	2,813
Schuyler	7	43	29	7	15.4	2,200
Central City under 2,500	2	50	50	2	4.3	2,150
Hamilton	2	50	50	2	4.3	2,150

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2/ New York counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For the interstate Binghamton SMSA, statistics are presented only for dentists located in the New York portion.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN NORTH CAROLINA

During the 1966 registration period, 1,574 dentists registered with the North Carolina State Board of Dental Examiners. Ninety percent of these dentists, 1,410, responded to the survey. Almost nine in every ten (89 percent) of the survey respondents are civilian dentists located in North Carolina, another 5 percent are civilians located in other States, primarily Virginia, Florida, and South Carolina, and the remaining 6 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in North Carolina

Location and military status	All dentists	Percent of dentists
Total licensed	1,574	100
Respondents	1,410	90
Nonrespondents	164	10
Respondents	1,410	100
Civilians in North Carolina	1,262	89
Civilians in another State	69	5
On active duty with Armed Forces	79	6

Approximately one-half (48 percent) of the survey respondents hold licenses to practice dentistry in one or more other States. Forty-five percent of the dentists located in North Carolina have at least one other license, with 38 percent licensed in one other State, and 7 percent in two or more other States. Multiple licensure is more common among dentists licensed in North Carolina but located in another State; one-third of these dentists have two or more licenses in addition to their North Carolina license. Seven of every ten out-of-State licenses were issued by adjacent States, with 26 percent in Georgia, 23 percent in Virginia, 15 percent in South Carolina, and 6 percent in Tennessee. The remainder are held in 32 other States and the District of Columbia.

PROFESSIONAL TRAINING

Three-fifths of the 1,262 responding dentists in North Carolina are graduates of the dental schools located at the University of North Carolina and Emory University, each school having contributed approximately 30 percent of the State's dental force. Since the mid-1950's, however, when the first students graduated from the School of Dentistry at the University of North Carolina, this school has become the primary source of dentists for the State, accounting for 3 of every 4 dentists (74 percent) who completed their dental education since that time. Concurrently, the contribution of Emory University has declined sharply, from more than two-fifths (42 percent) of the State's dentists graduating in 1955 or earlier to only 4 percent of those graduating in recent years.

Dental School Attended and Year of Graduation for Dentists in North Carolina

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	1,262	-	446	475	341
		(Percent distribution by school)			
University of North Carolina	387	31	74	12	-
Emory University	360	29	4	30	57
Medical College of Virginia	150	12	4	18	12
University of Maryland	92	7	3	9	11
University of Tennessee	42	3	3	6	*
Howard University	36	3	2	3	4
Meharry Medical College	31	2	1	2	5
University of Louisville	20	2	1	3	1
32 other schools	144	11	8	17	10

* Less than one-half of one percent.

The dental schools at the Medical College of Virginia and the University of Maryland have provided almost one-fifth of North Carolina's dentists, accounting for 12 percent and 7 percent, respectively. However, the relative contribution of these two schools has also decreased considerably since the in-State school began providing dentists. The remaining 21 percent of the dentists in North Carolina are graduates of 36 other dental schools. Among these, the University of Tennessee and Howard University have each contributed 3 percent of the State's dentists, while Meharry Medical College and the University of Louisville have each provided 2 percent.

DISTRIBUTION OF DENTISTS

Approximately 48 percent of the 1,262 dentists in North Carolina who responded to the survey are located in the seven metropolitan areas of the State. The Greensboro - Winston-Salem-High Point area has the largest number of dentists, 186, or 14 percent of the State supply. The Charlotte area, with 10 percent of the dentists, has the second largest dental force, while the areas of Durham and Raleigh have 8 percent and 7 percent, respectively. Of the remaining three areas, Asheville has 5 percent of the dentists and Fayetteville and Wilmington have 2 percent each.

Distribution of North Carolina Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	100	1,262	100
Metropolitan areas	13	607	48
Greensboro - Winston-Salem-High Point area	4	186	14
Charlotte area	2	128	10
Durham area	2	105	8
Raleigh area	1	85	7
Asheville area	1	57	5
Fayetteville area	1	26	2
Wilmington area	2	20	2
Nonmetropolitan counties	87	655	52
Central city 10,000-49,999	24	372	30
Central city 5,000-9,999	18	163	13
Central city 2,500-4,999	12	51	4
Central city under 2,500	33	69	5

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

More than one-half (52 percent) of North Carolina's dentists are located in the State's 87 nonmetropolitan counties. The 24 counties with central city populations of 10,000 or more have 372 dentists, 30 percent of the State supply. Another 13 percent of the dentists are located in the 18 counties having populations between 5,000 and 9,999 in their central cities, while the remaining 45 counties with central cities of under 5,000 have only 9 percent of the State's dentists. Of the 87 nonmetropolitan counties, only five have more than 20 dentists and 19 have between 10 and 20, while 38 counties have fewer than five dentists, including eight which have no dentists, according to survey response.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of the 1,262 responding dentists in North Carolina is 42.4 years. About one-fourth (305) of the dentists are under 35 years of age, and more than a third (452) are between 35 and 44. Almost one-fifth (234) of the dentists are 45-54 years of age, while an equal proportion are 55 or over. One in every eight, 152 dentists, are 65 years old or more, including 82 dentists who have reached the age of 70.

Median Age and Age Distribution of Dentists
in North Carolina, by County Group

County group	Median age	Percent of dentists			
		Under 35	35-44	45-54	55 & over
All counties	42.4	24	36	19	21
Metropolitan areas	41.4	27	37	16	20
Durham area	39.6	35	33	19	13
Fayetteville area	40.8	31	38	19	12
Raleigh area	41.2	27	36	19	18
Greensboro-Winston-Salem-High Point area	41.7	25	37	15	23
Charlotte area	42.0	24	38	15	23
Asheville area	42.3	21	41	12	26
Wilmington area	43.8	25	30	20	25
Nonmetropolitan counties	43.2	22	35	21	22
Central city 10,000-49,999	42.6	22	39	18	21
Central city 5,000-9,999	43.6	22	32	23	23
Central city 2,500-4,999	44.2	20	33	25	22
Central city under 2,500	47.1	23	23	23	31

The median age of dentists in the metropolitan areas is 41.4 years, almost two years below the median of 43.2 for dentists in nonmetropolitan counties. The youngest group of dentists is in the Durham area, where the median age is 39.6 years. More than one-third (35 percent) of the dentists in this area are under 35 years of age, while only one in every eight is 55 or over. The Wilmington area has the oldest group of dentists, with a median age of 43.8 years. One-fourth of these dentists are under age 35 and an equal proportion are 55 or older.

Among the nonmetropolitan county groups, the median ages tend to increase as the size of the central city decreases. The median age of dentists in counties with central cities of 10,000 or more is 42.6 years, compared to 47.1 years for dentists in the group of counties with central city populations under 2,500.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,262 responding dentists in North Carolina, 1,238, or 98 percent, are active in their profession, giving the State one professionally active dentist for every 3,881 persons. In the metropolitan areas--which have 48 percent of all active dentists and only 35 percent of the population--the ratio is one dentist for every 2,848 persons. The remainder of the State--which has 52 percent of the active dentists and 65 percent of the population--has a much less favorable ratio of one dentist for every 4,828 persons.

Number of Persons per Active Dentist in North Carolina

County group*	Professionally active dentists	Population	Persons per dentist
All counties	1,238	4,805,200	3,881
Metropolitan areas	592	1,686,300	2,848
Durham area	103	166,400	1,616
Raleigh area	82	181,600	2,215
Asheville area	54	136,300	2,524
Charlotte area	127	357,700	2,817
Greensboro - Winston-Salem - High Point area	181	572,300	3,162
Wilmington area	20	95,600	4,780
Fayetteville area	25	176,400	7,056
Nonmetropolitan counties	646	3,118,900	4,828
Central city 10,000-49,999	366	1,655,000	4,522
Central city 5,000-9,999	160	722,200	4,514
Central city 2,500-4,999	51	272,900	5,351
Central city under 2,500	69	468,800	6,794

* See Appendix Table for individual county data.

The best ratio among the metropolitan areas, 1,616 persons per dentist, is found in the Durham area, which includes Orange County where the University of North Carolina School of Dentistry is located. The Raleigh area has the next best ratio, one dentist for every 2,215 persons. Three other areas--Asheville, Charlotte, and Greensboro-Winston-Salem-High Point--also have ratios considerably below the State average, while the Wilmington and Fayetteville areas have much higher ratios.

Among the 87 nonmetropolitan counties, only eight have persons-per-dentist ratios under 3,000, while 36 have more than 5,000 persons for every dentist, including 13 counties which have only one dentist for every 8,000 or more persons. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city decreases. Counties with central cities of 5,000 or more population have an average persons-per-dentist ratio of approximately 4,500, while those counties with central cities of fewer than 2,500 inhabitants average nearly 6,800 persons per dentist.

UTILIZATION OF AUXILIARIES

Nine of every ten dental practitioners in North Carolina (i.e., dentists who spend any time working at the chair) reported the employment of one or more auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 85 percent of the practitioners, including 79 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 39 percent of the dentists, three-fourths of whom employ at least one full time. Only 14 percent of the dentists employ dental hygienists and 6 percent employ laboratory technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

North Carolina Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	1,207 [1]	100	85	5
One or more auxiliaries	1,063	90	85	5
Assistant	1,008	85	79	6
Hygienist	162	14	6	8
Laboratory technician	74	6	2	4
Secretary or receptionist	460	39	29	10
Other type of personnel	36	3	1	2
No auxiliary	122	10	-	-

1/ Includes 22 dentists who did not report on auxiliary utilization.

The utilization of auxiliaries varies with the age of the dentist and is less common among the older dentists. Ninety-four percent of the dentists under age 55 report the employment of at least one auxiliary. The proportion utilizing auxiliaries decreases to 82 percent for those dentists 55-64 years of age and to only 62 percent for dentists 65 and over.

Almost one-fourth of the dental practitioners in North Carolina reported one or more vacancies for auxiliary personnel. Of these dentists, 45 percent indicated vacant positions for full-time dental hygienists and 21 percent, for full-time dental assistants.

OTHER SURVEY FINDINGS

☐ About 16 percent (201 dentists) of the respondents reported that they had completed one or more years of advanced training after receiving the dental degree. A total of 131 dentists have completed at least one year of advanced academic work as graduate or postgraduate students, and 97 dentists have received advanced clinical training as interns or residents. There are 27 dentists who have completed both academic and clinical training.

☐ Approximately 93 percent of the professionally active dentists in North Carolina are primarily in private practice. Three percent are on the staff of the dental school, and another 3 percent are employed by a governmental agency. The remaining 1 percent are engaged in some other dental activity, such as taking advanced training.

☐ Dentists reporting on time spent in patient care devoted an average of 38.5 hours per week to this activity for 47.7 weeks during the year preceding the survey. About one dentist in ten worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ Twelve percent of the practitioners reported that they limit their practice to a dental specialty, including 4 percent in orthodontics, 3 percent in oral surgery, 2 percent in periodontics, and the remaining 3 percent in four other areas. A large proportion (49 percent) of the dental practitioners in the Durham metropolitan area reported a dental specialty, compared to 14 percent of the dentists in other metropolitan areas and only 4 percent of those in nonmetropolitan counties.

December 1968.

APPENDIX TABLE

Selected Data on Dentists in North Carolina, By Location

County group and county	Responding civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
All counties	1,262	305	271	1,238	4,805.2	3,881
Metropolitan areas 2/	607	162	124	592	1,686.3	2,848
Greensboro-Winston-Salem-High Point area	186	46	43	181	572.3	3,162
Forsyth	74	18	21	72	210.2	2,919
Guilford	92	21	20	89	272.2	3,058
Randolph	15	5	1	15	66.8	4,453
Yadkin	5	2	1	5	23.1	4,620
Charlotte area	128	31	30	127	357.7	2,817
Mecklenburg	118	29	25	117	311.9	2,666
Union	10	2	5	10	45.8	4,580
Raleigh area	85	23	15	82	181.6	2,215
Wake	85	23	15	82	181.6	2,215
Fayetteville area	26	8	3	25	176.4	7,056
Cumberland	26	8	3	25	176.4	7,056
Durham area	105	37	13	103	166.4	1,616
Durham	50	13	10	48	119.5	2,490
Orange	55	24	3	55	46.9	853
Asheville area	57	12	15	54	136.3	2,524
Buncombe	57	12	15	54	136.3	2,524

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in North Carolina, By Location

County group and county	Responding civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
Metropolitan areas 2/ (cont'd.)						
Wilmington area	20	5	5	20	95.6	4,780
Brunswick	2	1	-	2	20.7	10,350
New Hanover	18	4	5	18	74.9	4,161
Nonmetropolitan counties 3/	655	143	147	646	3,118.9	4,828
Central city 25,000-49,999	89	19	17	87	376.9	4,332
Alamance	24	5	7	23	91.4	3,974
Gaston	32	10	2	32	135.2	4,225
Wayne	19	3	4	19	90.5	4,763
Wilson	14	1	4	13	59.8	4,600
Central city 10,000-24,999	283	62	61	279	1,278.1	4,581
Cabarrus	20	3	9	20	71.6	3,580
Caldwell	7	3	1	7	52.4	7,486
Catawba	24	3	3	24	80.5	3,354
Cleveland	14	4	2	14	67.6	4,829
Craven	16	3	3	16	63.8	3,988
Davidson	16	6	4	16	87.1	5,444
Edgecombe	8	2	3	8	55.5	6,938
Halifax	8	1	3	8	59.0	7,375
Iredell	22	3	4	21	65.6	3,124
Lee	10	3	2	10	28.7	2,870
Lenoir	18	2	6	16	58.4	3,650
Nash	13	1	3	13	62.3	4,792

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in North Carolina, By Location

County group and county	Responding civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 35	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city 10,000-24,999 (cont'd.)						
Onslow	12	5	2	12	101.7	8,475
Pasquotank	9	2	2	8	26.1	3,263
Pitt	17	6	2	17	74.1	4,359
Robeson	14	5	2	14	90.0	6,429
Rockingham	17	4	5	17	72.1	4,241
Rowan	23	5	4	23	86.5	3,761
Stanly	7	1	-	7	42.8	6,114
Vance	8	-	1	8	32.3	4,038
Central city 5,000-9,999	163	36	37	160	722.2	4,514
Beaufort	8	4	2	8	35.7	4,463
Burke	15	8	1	15	56.8	3,787
Carteret	5	-	3	5	34.7	6,940
Granville	8	4	1	7	33.6	4,800
Harnett	9	2	2	9	48.6	5,400
Haywood	17	1	5	17	40.7	2,394
Henderson	13	3	2	13	38.8	2,985
Johnston	12	4	4	12	61.6	5,133
Lincoln	6	1	2	5	29.4	5,880
Martin	3	-	1	3	26.7	8,900
Moore	11	2	4	10	38.5	3,850
Person	6	1	2	6	27.3	4,550
Richmond	8	-	1	8	38.8	4,850
Rutherford	9	2	1	9	44.6	4,956

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in North Carolina, By Location

County group and county	Responding civilian dentists				Population 1/ (in 000's)	Persons per active dentist
		Age in 1965				
	Total	Under 35	55 years or more	Profes-sionally active		
Nonmetropolitan counties 3/ (cont'd.)						
Central city 5,000-9,999 (cont'd.)						
Sampson	6	-	1	6	47.3	7,883
Scotland	4	1	-	4	24.6	6,150
Surry	14	1	4	14	49.4	3,529
Wilkes	9	2	1	9	45.1	5,011
Central city 2,500-4,999	51	10	11	51	272.9	5,351
Anson	3	-	1	3	24.0	8,000
Chatham	6	2	1	6	27.4	4,567
Chowan	4	1	2	4	11.3	2,825
Columbus	7	1	1	7	48.1	6,871
Currituck	-	-	-	-	6.7	-
Franklin	3	-	-	3	27.6	9,200
Hertford	6	1	-	6	23.2	3,867
Hoke	2	-	1	2	16.6	8,300
McDowell	6	1	1	6	27.3	4,550
Mitchell	5	1	2	5	13.3	2,660
Transylvania	3	2	-	3	16.8	5,600
Washington	2	1	1	2	13.5	6,750
Watauga	4	-	1	4	17.1	4,275
Central city under 2,500	69	16	21	69	468.8	6,794
Alexander	2	-	-	2	16.1	8,050
Alleghany	1	1	-	1	7.6	7,600
Ashe	4	1	2	4	18.7	4,675

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in North Carolina, By Location

County group and county	Responding civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Under 35	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city under 2,500 (cont'd.)						
Avery	2	1	-	2	11.4	5,700
Bertie	1	-	1	1	23.4	23,400
Bladen	2	2	-	2	28.4	14,200
Camden	-	-	-	-	5.7	-
Caswell	2	1	1	2	19.4	9,700
Cherokee	3	-	1	3	15.4	5,133
Clay	-	-	-	-	5.3	-
Dare	1	-	-	1	6.3	6,300
Davie	3	1	-	3	17.3	5,767
Duplin	7	-	3	7	39.8	5,686
Gates	-	-	-	-	9.1	-
Graham	-	-	-	-	6.3	-
Greene	1	-	1	1	16.1	16,100
Hyde	-	-	-	-	5.4	-
Jackson	4	-	2	4	17.1	4,275
Jones	-	-	-	-	11.0	-
Macon	5	2	2	5	14.3	2,860
Madison	2	-	-	2	15.6	7,800
Montgomery	5	1	1	5	18.9	3,780
Northampton	4	1	2	4	26.1	6,525
Pamlico	-	-	-	-	9.7	-
Pender	1	-	1	1	18.5	18,500
Perquimans	3	1	-	3	9.0	3,000
Polk	5	2	1	5	11.3	2,260

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in North Carolina, By Location

County group and county	Responding civilian dentists				Population [1] (in 000's)	Persons per active dentist
		Age in 1965				
	Total	Under 35	55 years or more	Profes-sionally active		
Nonmetropolitan counties [3] (cont'd.)						
Central city under 2,500 (cont'd.)						
Stokes	4	1	1	4	22.6	5,650
Swain	3	1	1	3	7.8	2,600
Tyrrell	1	-	-	1	4.3	4,300
Warren	2	-	1	2	18.0	9,000
Yancey	1	-	-	1	12.9	12,900

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[2] North Carolina counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

[3] Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN NORTH DAKOTA

During the 1966 registration period, 370 dentists registered with the North Dakota State Board of Dental Examiners. Sixty-nine percent of the registered dentists were civilians located in North Dakota, 27 percent were civilians located in other States, and 4 percent were on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in North Dakota

Location and military status	All dentists	Percent of dentists
Total licensed	370	100
Respondents	275	74
Nonrespondents	95	26
Total licensed	370	100
Civilians in North Dakota	256	69
Respondents	183	-
Nonrespondents	73	-
Civilians in another State	99	27
On active duty with Armed Forces	15	4

The survey questionnaire was completed by 275 dentists, 74 percent of the total registered. Data provided by survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained from records maintained by the North Dakota State Board of Dental Examiners or from the 1967 American Dental Directory, published by the American Dental Association.

About four-fifths of the survey respondents (79 percent) hold a license to practice dentistry in one or more other States. Sixty percent of the dentists located in North Dakota have one other license, while only 10 percent have two or more other licenses. The proportion of out-of-State dentists holding multiple licenses is considerably greater; two-fifths hold two or more licenses in addition to their North Dakota license. Almost one-half of the licenses held in States outside of North Dakota are held in Minnesota, with an additional 16 percent maintained in Illinois and Wisconsin, and 5 percent in California. The remainder are held in 21 other States scattered across the Nation.

PROFESSIONAL TRAINING

More than nine in every 10 of North Dakota's 256 dentists are graduates of 13 dental schools located in the North Central States. The largest contributor among these schools is the University of Minnesota, which has supplied almost half (46 percent) of the State's dental force. Marquette and Northwestern Universities and Loyola University of Chicago have also made important contributions, having provided among them 30 percent of the supply. The University of Missouri is the only other dental school to have supplied as much as 5 percent of the State's dentists.

Only about one-fourth (24 percent) of North Dakota's dentists graduated from dental school since 1955. In contrast, some 45 percent received their dental degrees prior to World War II. The proportional contribution of the University of Minnesota has increased in recent years from 42 percent of the dentists who graduated in 1955 or earlier to 57 percent of those graduating since that time.

Dental School Attended and Year of Graduation for Dentists in North Dakota

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	256 1/	-	61	73	114
		(Percent distribution by school)			
Schools in North Central States	231	92	93	88	93
University of Minnesota	114	46	57	42	43
Marquette University	30	12	11	8	15
Loyola University of Chicago	25	10	11	4	12
Northwestern University	21	8	3	12	9
9 other schools	41	16	11	22	14
12 schools located elsewhere	21	8	7	12	7

1/ Dental school attended not available for 4 dentists and year of graduation for 8 dentists. Percents based on known totals.

Some 11 percent of the survey respondents, 20 dentists, reported that they had completed one or more years of advanced training after receiving the dental degree. Of these dentists, 16 had completed one year or more of advanced academic work as graduate or postgraduate students, and seven had received advanced clinical training as residents or interns. Three dentists had completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

North Dakota's dentists are unevenly distributed geographically with 70 percent of the dentists located in only 14 of the State's 53 counties. The Fargo metropolitan area (Cass County), with 32 dentists, has 12 percent of the State's supply.

Distribution of North Dakota Dentists, By County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	53	256	100
Fargo metropolitan area	1	32	12
Nonmetropolitan counties	52	224	88
Central city 10,000-49,999	6	100	39
Central city 2,500-9,999	7	48	19
Central city under 2,500	39	76	30

* See Appendix Table for definition of metropolitan area and presentation of individual county data.

The six nonmetropolitan counties with at least 10,000 persons in their central cities have among them 100 dentists, or approximately 40 percent of the total dental force. Three of these nonmetropolitan counties--Grand Forks, Ward, and Burleigh--have between 20 and 25 dentists each. The seven counties with central city populations between 2,500 and 9,999 have 48 dentists, about one-fifth of the total supply.

Thirty percent (76) of North Dakota's dentists are scattered among the 39 counties with less than 2,500 inhabitants in their central cities. Only three of these 39 counties have as many as five dentists, while 27 counties have fewer than three dentists each, including eight which have no dentists, according to available information.

AGE DISTRIBUTION OF DENTISTS BY AREA

The median age of dentists in North Dakota is 48.4 years. Approximately 30 percent (71) of the dentists are under 40 years of age, and an almost equal proportion are between 40 and 54 years of age. On the other hand, a substantial portion, more than two-fifths, are 55 or over. Some 17 percent of the dentists are at least 65 years of age, including 12 percent who have reached the age of 70.

Median Age and Age Distribution of North Dakota Dentists

County group	Median age	Percent of dentists Under 40	 40-54	 55 & over
All counties	48.4	29	30	41
Fargo metropolitan area	43.8	36	32	32
Nonmetropolitan counties	49.0	28	30	42
Central city 10,000-49,999	48.0	27	32	41
Central city 2,500-9,999	47.5	34	28	38
Central city under 2,500	52.0	26	28	46

Dentists in the Fargo metropolitan area have a median age of 43.8 years, more than four years younger than the average for the State. Slightly over one-third of these dentists are under 40 years of age, while another one-third are 55 years or more.

The median ages of dentists average 48.0 years in the two groups of nonmetropolitan counties with 2,500 or more persons in their central cities. By contrast, the median age of dentists in counties with central city populations of less than 2,500 is 52.0 years, some 4 years above the State average. In this latter group, only about one-fourth of the dentists are under 40 years of age, while almost one-half are 55 years or more.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 256 licensed dentists in North Dakota, 236, or 92 percent, are active in their profession, giving North Dakota one professionally active dentist for every 2,714 persons. There is one professionally active dentist for every 2,271 persons in the Fargo metropolitan area, a ratio considerably better than the State average.

Number of Persons Per Active Dentist in North Dakota

County group*	Professionally active dentists	Population	Persons per dentist
All counties	236	640,400	2,714
Fargo metropolitan area	31	70,400	2,271
Nonmetropolitan counties	205	570,000	2,780
Central city 10,000-49,999	95	218,800	2,303
Central city 2,500-9,999	42	102,800	2,428
Central city under 2,500	68	248,400	3,653

* See Appendix Table for individual county data.

The six nonmetropolitan counties with 10,000 or more persons in their central cities have one dentist for every 2,303 persons, a ratio quite similar to the Fargo metropolitan area. The seven counties with central city populations between 2,500 and 9,999 have a slightly higher persons-per-dentist ratio of 2,428.

The 39 nonmetropolitan counties with less than 2,500 persons in their central cities have a much less favorable persons-per-dentist ratio of 3,653, due in part to eight counties which have no active dentists. Among the remaining 31 counties, 17 have ratios exceeding 3,000 persons per dentist, including eight counties with ratios in excess of 5,000.

UTILIZATION OF AUXILIARIES

More than four-fifths of North Dakota's responding practitioners (i.e., dentists who spend any time working at the chair) employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 74 percent of all dentists, with 67 percent employing full-time assistants. More than one in every four practitioners reported the employment of a secretary or receptionist, usually on a full-time basis. Nine percent of the dentists employ dental hygienists, and 4 percent employ laboratory technicians in their practices.

North Dakota Dentists Employing Auxiliaries, By Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	172[1]	100	76	5
One or more auxiliaries	138	81	76	5
Assistant	125	74	67	7
Hygienist	16	9	6	3
Laboratory technician	7	4	-	4
Secretary or receptionist	46	27	16	11
Other type of personnel	3	2	-	2
No auxiliary	32	19	-	-

[1] Includes 2 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and is less common among older dentists. Ninety-four percent of the dental practitioners under age 55 employ at least one auxiliary, as compared to approximately 58 percent of those dentists 55 years of age or older. Young dentists just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age, and of hygienists, until age 35.

OTHER SURVEY FINDINGS

☐ Ninety-six percent of the responding professionally active dentists in North Dakota are primarily engaged in private practice, with 95 percent self-employed and 1 percent employed by other dentists. The remaining 4 percent are employed in governmental agencies or are engaged in other dental activities, such as taking advanced training.

☐ Dentists reporting on time spent in providing patient care devoted an average of 38.8 hours per week to this activity for 46.3 weeks during the year preceding the survey.

☐ Seven percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics and to oral surgery. About one in every five dentists in the Fargo metropolitan area limits his practice as compared to one in every 20 in nonmetropolitan counties.

☐ Fourteen percent of the responding dentists had practiced as civilian dentists in other States immediately prior to assuming their present North Dakota location. Half of these dentists came from Minnesota, while the remainder came from more distant States, principally Wisconsin and Illinois.

☐ Of the dentists who are licensed in North Dakota but located in other States, about one-fourth are located in Minnesota and another 16 percent are in California, while the remainder are scattered among 20 other States across the Country.

April 1969.

APPENDIX TABLE

Selected Data on Dentists in North Dakota, By Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965		Professionally active		
				Under 40	55 yrs. or more			
All counties	256	183	73	71	100	236	640.4	2,714
Fargo metropolitan area[2/]	32	23	9	11	10	31	70.4	2,271
Cass	32	23	9	11	10	31	70.4	2,271
Nonmetropolitan counties[3/]	224	160	64	60	90	205	570.0	2,780
Central city 25,000-49,999	68	47	21	15	27	64	144.8	2,262
Burleigh	21	12	9	5	6	21	37.8	1,800
Grand Forks	24	16	8	3	11	23	54.0	2,348
Ward	23	19	4	7	10	20	53.0	2,650
Central city 10,000-24,999	32	21	11	10	11	31	74.0	2,387
Morton	7	3	4	3	2	7	21.9	3,129
Stutsman	15	11	4	5	6	14	25.9	1,850
Williams	10	7	3	2	3	10	26.2	2,620
Central city 5,000-9,999	42	33	9	14	16	37	85.0	2,297
Barnes	11	9	2	3	3	9	16.7	1,856
Ramsey	8	7	1	2	6	7	12.9	1,843
Richland	8	8	-	2	2	7	18.4	2,629
Stark	8	5	3	5	3	8	19.5	2,438
Walsh	7	4	3	2	2	6	17.5	2,917
Central city 2,500-4,999	6	5	1	2	2	5	17.8	3,560
Bottineau	3	2	1	-	2	2	10.9	5,450
Pierce	3	3	-	2	-	3	6.9	2,300

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in North Dakota, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 40	55 yrs. or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city under 2,500	76	54	22	19	34	68	248.4	3,653
Adams	2	-	2	-	1	2	4.2	2,100
Benson	3	3	-	-	2	3	8.8	2,933
Billings	-	-	-	-	-	-	1.4	-
Bowman	1	1	-	-	-	1	4.2	4,200
Burke	-	-	-	-	-	-	5.4	-
Cavalier	2	1	1	1	1	1	9.3	9,300
Dickey	2	1	1	-	2	2	7.7	3,850
Divide	4	4	-	1	1	4	5.3	1,325
Dunn	1	1	-	-	1	1	5.9	5,900
Eddy	1	-	1	-	-	1	4.8	4,800
Emmons	2	1	1	-	1	2	7.8	3,900
Foster	3	3	-	1	2	2	5.4	2,700
Golden Valley	1	-	1	-	1	1	2.9	2,900
Grant	1	-	1	1	-	1	5.8	5,800
Griggs	3	2	1	1	1	3	4.8	1,600
Hettinger	2	1	1	2	-	2	5.9	2,950
Kidder	1	1	-	-	1	1	4.9	4,900
La Moure	5	5	-	1	2	4	8.2	2,050
Logan	-	-	-	-	-	-	4.9	-
McHenry	2	2	-	2	-	2	10.4	5,200
McIntosh	2	1	1	1	1	2	6.3	3,150
McKenzie	1	1	-	-	-	1	7.5	7,500
McLean	3	1	2	-	2	2	12.1	6,050
Mercer	2	-	2	-	1	1	6.1	6,100
Mountrail	4	3	1	2	2	4	10.4	2,600

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in North Dakota, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 40	55 yrs. or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city under 2,500 (cont'd.)								
Nelson	1	1	-	-	1	1	6.5	6,500
Oliver	-	-	-	-	-	-	2.5	-
Pembina	4	3	1	-	3	3	12.3	4,100
Ransom	3	1	2	2	-	3	7.6	2,533
Renville	2	2	-	-	1	2	4.3	2,150
Rolette	3	3	-	2	1	3	10.5	3,500
Sargent	-	-	-	-	-	-	6.5	-
Sheridan	1	1	-	1	-	1	3.9	3,900
Sioux	-	-	-	-	-	-	3.7	-
Slope	-	-	-	-	-	-	1.7	-
Steele	-	-	-	-	-	-	4.5	-
Towner	2	1	1	-	1	2	5.2	2,600
Traill	7	5	2	-	3	5	10.1	2,020
Wells	5	5	-	1	2	5	8.7	1,740

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2/ North Dakota part of the interstate Fargo-Moorhead Standard Metropolitan Statistical area, as established by the U.S. Bureau of the Budget, Office of Statistical Standards. Statistics are presented only for dentists located in the Fargo area (Cass County).

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN OHIO

During the 1967 registration period, some 5,000 dentists registered with the Ohio State Dental Board. Of these dentists, 92 percent were located in Ohio, and 8 percent were located in other States. Ohio dentists on active duty with the Armed Forces were not included in the survey, since they are exempted from annual registration requirements while on active military duty.

Location of Dentists Licensed in Ohio

Location	All dentists	Percent of dentists
Total licensed	4,999	100
Respondents	4,178	84
Nonrespondents	821	16
Total licensed	4,999	100
Dentists in Ohio	4,579	92
Respondents	3,850	-
Nonrespondents	729	-
Dentists in another State	420	8

The survey questionnaire was completed by 4,178 dentists, 84 percent of all those registered. The information provided by these survey respondents has been supplemented, when possible, by data on location, age, dental school attended, and year of graduation for dentists not responding to the survey. This information was obtained from records maintained by the Ohio State Dental Board or from the 1968 American Dental Directory, published by the American Dental Association.

Multiple licensure is not too common among dentists registered in Ohio; only one-fifth hold a license to practice dentistry in one or more other States. Of those dentists located in the State, about 14 percent have more than one license, including 12 percent with just one other license and a mere 2 percent with two or more other licenses. The proportion of out-of-State dentists having multiple licenses is considerably greater; 22 percent hold two or more licenses in addition to the one held in Ohio.

DENTAL SCHOOL ATTENDED

Four-fifths of Ohio's dentists graduated from in-State schools, including the dental schools at Ohio State and Case Western Reserve Universities and two other schools which are no longer in existence. One-half of the State's dental force--some 2,300 dentists--are graduates of Ohio State University. This school has consistently graduated the largest number of Ohio's dentists, with the proportion increasing from 38 percent of all dentists graduating prior to World War II to 62 percent of those graduating since 1955. Over one-fourth of the State's dentists--27 percent--are graduates of Case Western Reserve University, which over the years has trained a relatively constant proportion of Ohio's dental force. Three percent of the dentists are graduates of two extinct schools, the Cincinnati and Ohio Colleges of Dental Surgery.

Dental School Attended and Year of Graduation
for Dentists in Ohio

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	4,579	-	1,407	1,461	1,711
		(Percent distribution by school)			
Schools in Ohio	3,642	80	84	82	75
Ohio State University	2,276	50	62	52	38
Case Western Reserve University	1,223	27	22	30	28
2 other schools (extinct)	143	3	-	-	9
Schools in other States	937	20	16	18	25
University of Louisville	111	2	2	2	3
University of Pittsburgh	105	2	2	2	3
St. Louis University	92	2	1	2	2
University of Indiana	88	2	1	1	3
Loyola University (Chicago)	85	2	1	2	2
Northwestern University	74	2	1	2	2
38 other schools	382	8	8	7	10

One-fifth of the State's dentists obtained their dental degree from 44 schools located in other States. Of these dentists, 9 percent, or 403, graduated from eight schools located in adjacent States, primarily the Universities of Louisville, Pittsburgh, and Indiana. The remaining 11 percent, 534 dentists, are graduated of dental schools located in more distant States, mainly St. Louis and Northwestern Universities, and Loyola University of Chicago.

DISTRIBUTION OF DENTISTS

More than four-fifths (84 percent) of Ohio's dentists are located in the 16 metropolitan areas of the State. The Cleveland area has the largest dental force, over 1,200 dentists, about one-fourth of all dentists in the State. The Columbus area and the Ohio portion of the interstate Cincinnati area have the next largest dental forces, 11 percent and 10 percent, respectively. Seven percent of the dentists are located in the Dayton area, while the Akron area and the Ohio portion of the interstate Toledo area have 6 percent each. The Youngstown-Warren and Canton areas have 5 percent and 4 percent of the State's dentists, respectively. The remaining eight metropolitan areas have a combined total of 402 dentists, 9 percent of the total dentist supply.

Distribution of Ohio Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	88	4,579	100
Metropolitan areas	31	3,857	84
Cleveland area	4	1,231	26
Columbus area	3	529	11
Cincinnati area (Ohio part)	3	442	10
Dayton area	4	319	7
Akron area	2	290	6
Toledo area (Ohio part)	2	259	6
Youngstown-Warren area	2	224	5
Canton area	1	161	4
8 other areas	10	402	9
Nonmetropolitan counties	57	722	16
Central city 10,000-49,999	28	545	12
Central city under 10,000	29	177	4

* See Appendix Table for definition of interstate and other metropolitan areas and for presentation of individual county data.

Only 16 percent (722) of Ohio's dentists are located in the State's 57 nonmetropolitan counties. Three-fourths of these dentists are concentrated in the 28 counties with 10,000 or more persons in their central cities, while the 29 counties with central city populations under 10,000 have only 4 percent of all dentists in the State.

AGE OF DENTISTS

The median age of dentists in Ohio is 44.4 years. A full one-fourth of the State's dentists are under 35 years of age, but almost one-third are 55 or older. More than two-fifths (43 percent) of the dentists are between 35 and 54 years of age, with 27 percent between 35 and 44. Fifteen percent, or 679 dentists, are 65 or older, including 316 dentists who have reached age 70.

Age Distribution of Ohio Dentists

Age in 1965*	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	4,579[1/]	100	-
Under 30	439	10	10
30 - 34	673	15	25
35 - 39	556	12	37
40 - 44	673	15	52
45 - 49	394	9	61
50 - 54	296	7	68
55 - 59	379	8	76
60 - 64	426	9	85
65 - 69	363	8	93
70 - 74	202	4	97
75 & over	114	3	100

* Age computed to 1965 to enable comparison among all States.

[1/] Age not available for 64 dentists. Percents are based on total for whom age is known.

Dentists in the metropolitan areas, with a median age of 44.2 years, are only slightly younger than dentists in the nonmetropolitan counties, where the median age is 45.4 years. Among the metropolitan areas, Dayton and Columbus have the youngest groups of dentists, with median ages of approximately 41 years. About 46 percent of the dentists in these areas are under 40 years of age, while only 23 percent are 55 or older. The Cleveland area, with a median age of about 49 years, has the oldest dentists as a group. Less than one-third of the dentists in this area are under 40 years of age, while slightly more than two-fifths are 55 or older.

In nonmetropolitan counties, dentist ages tend to increase as the population of the central city decreases. The overall median age for dentists in counties with central city populations over 10,000 is 44.9 years, while dentists in counties with smaller central cities have a median age of 47.5 years.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 4,579 dentists in Ohio, 4,409, or 96 percent, are professionally active, giving the State one active dentist for every 2,375 persons. The 16 metropolitan areas combined have 2,178 persons per dentist, while the nonmetropolitan counties have a considerably less favorable ratio of 3,429.

Number of Persons Per Active Dentist in Ohio

County group*	Professionally active dentists	Population	Persons per dentist
All counties	4,409	10,471,200	2,375
Metropolitan areas	3,714	8,088,000	2,178
Cleveland area	1,182	2,020,500	1,709
Columbus area	516	857,700	1,662
Cincinnati area (Ohio part)	423	1,110,700	2,626
Dayton area	308	810,100	2,630
Akron area	274	662,500	2,418
Toledo area (Ohio part)	248	563,000	2,270
Youngstown-Warren area	218	548,300	2,515
Canton area	153	363,900	2,378
8 other areas	392	1,151,300	2,937
Nonmetropolitan counties	695	2,383,200	3,429
Central city 10,000-49,999	526	1,672,000	3,179
Central city under 10,000	169	711,200	4,208

* See Appendix Table for data pertaining to other metropolitan areas and individual counties.

Among the metropolitan areas, the 3-county Columbus area has the best ratio with 1,662 persons per active dentist. Franklin County, the hub of the area, has the best county ratio in the State, 1,575 persons per dentist. The 4-county Cleveland area, with 1,709 persons per dentist, is the only other metropolitan area with a ratio under 2,000. However, the ratios for the Ohio portion of the interstate Toledo area and the Mansfield area are below the average for the State, 2,270 and 2,275, respectively, while that of the Canton area is essentially the same as the State average. In five areas--Akron, Youngstown-Warren, Dayton, and the Ohio portions of the interstate areas of Wheeling and Cincinnati--the ratios range between 2,400 and 2,600, while the areas of Springfield, Lorain-Elyria, and Steubenville-Weirton (Ohio part) have between 2,700 and 2,900 persons per dentist. The remaining three areas--Lima, Hamilton-Middletown, and Huntington-Ashland (Ohio part) have more than 3,400 persons for every active dentist.

Among the 57 nonmetropolitan counties, only one, Erie, with one dentist for every 2,248 persons, has a ratio below the State average, and just three others have ratios under 2,500. There are 11 other counties with persons-per-dentist ratios under 3,000, yet 15 counties have more than 5,000 persons per dentist, including three with only one dentist for every 10,000 or more persons.

UTILIZATION OF AUXILIARIES

Almost four-fifths of Ohio's responding practitioners (i.e., dentists who spend any time working at the chair) reported the employment of one or more auxiliaries. The dental assistant, the most widely utilized auxiliary, is employed by 71 percent of the practitioners, including 63 percent who employ at least one assistant on a full-time basis. Secretaries and receptionists are employed by 29 percent of the dentists, with more than two-thirds utilizing such personnel full time. Dental hygienists are employed by 18 percent of the dentists, and laboratory technicians, by 7 percent; these auxiliaries are most often employed part-time only.

Ohio Dentists Employing Auxiliaries, By Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners: Total	With one full-time employee (or more)	With only part-time employees
Total	3,674[1]	100	71	8
One or more auxiliaries	2,831	79	71	8
Assistant	2,523	71	63	8
Hygienist	638	18	8	10
Laboratory technician	256	7	2	5
Secretary or receptionist	1,042	29	20	9
Other type of personnel	130	4	2	2
No auxiliary	731	21	-	-

[1] Includes 112 dentists who did not report on auxiliary utilization.

Auxiliary utilization varies with the age of the dentist and tends to be more common among the younger dentists. Approximately 90 percent of the practitioners under 45 years of age employ some type of auxiliary. This proportion decreases to 73 percent for dentists 45 to 64 years of age and to only 48 percent for those 65 and over.

Sixteen percent of the dentists reported one or more vacant positions for auxiliary personnel. Two-fifths of these dentists had vacancies for full-time dental hygienists, and one-fourth reported vacancies for full-time dental assistants.

OTHER SURVEY FINDINGS

☐ Approximately one of every four survey respondents (889 dentists) reported that he had completed one or more years of advanced training after receiving the dental degree. Of 605 dentists taking advanced clinical training, 442 had completed an internship, and 163, a residency. Of 468 dentists reporting advanced academic training, 214 had received a master's or other advanced degree and 254 had received no additional degrees but had completed at least one year of study at the postgraduate level. A total of 184 dentists reported the completion of both academic and clinical training.

☐ Ninety-six percent of the responding professionally active dentists in Ohio are primarily engaged in private practice, with 95 percent self-employed and 1 percent employed by other dentists. The remaining 4 percent are employed by governmental agencies or are engaged in other dental activities, such as taking advanced training.

☐ Twelve percent of the responding active dentists reported at least one part-time dental activity in addition to their principal employment. Part-time teaching in a dental school was the most frequently reported secondary activity, followed by employment in a State or local government agency. Various other activities were reported, including employment by other dentists and serving in a voluntary agency.

☐ About 14 percent of the responding dental practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics and oral surgery. Dentists in metropolitan areas are almost twice as likely to limit their practices as are those in nonmetropolitan counties.

☐ Of the 420 dentists licensed in Ohio but located in another State, one-fourth are in the five adjacent States, primarily, Pennsylvania, Kentucky, and Michigan. Twenty percent of the out-of-State dentists are located in Florida, 14 percent are in California, and 7 percent in New York. The remainder are scattered among 31 other States, the District of Columbia, and foreign countries.

April 1969.

APPENDIX TABLE

Selected Data on Dentists in Ohio, By Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 40	55 yrs. or more			
All counties	4,579	3,850	729	1,668	1,484	4,409	10,471.2	2,375
Metropolitan areas[2/]	3,857	3,233	624	1,425	1,247	3,714	8,088.0	2,178
Cleveland area	1,231	1,017	214	374	494	1,182	2,020.5	1,709
Cuyahoga	1,109	918	191	319	469	1,063	1,719.3	1,617
Geauga	13	9	4	7	4	12	57.4	4,783
Lake	78	62	16	35	12	77	170.4	2,213
Medina	31	28	3	13	9	30	73.4	2,447
Cincinnati area (Ohio part)	442	376	66	176	143	423	1,110.7	2,626
Clermont	14	13	1	9	5	14	97.9	6,993
Hamilton	413	352	61	160	135	395	933.2	2,363
Warren	15	11	4	7	3	14	79.6	5,686
Columbus area	529	449	80	241	127	516	857.7	1,662
Delaware	12	12	-	6	2	12	39.0	3,250
Franklin	507	427	80	233	122	495	779.8	1,575
Pickaway	10	10	-	2	3	9	38.9	4,322
Dayton area	319	277	42	147	73	308	810.1	2,630
Greene	35	33	2	17	6	34	111.6	3,282
Miami	23	21	2	5	6	23	78.5	3,413
Montgomery	255	218	37	124	60	245	585.0	2,388
Preble	6	5	1	1	1	6	35.0	5,833
Akron area	290	235	55	99	90	274	662.5	2,418
Portage	28	25	3	11	7	27	106.6	3,948
Summit	262	210	52	88	83	247	555.9	2,251

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965: Under 40	Age in 1965: 55 yrs. or more	Professionally active		
Metropolitan areas[2/] (cont'd.)								
Toledo area (Ohio part)	259	227	32	100	87	248	563.0	2,270
Lucas	238	208	30	92	81	227	483.8	2,131
Wood	21	19	2	8	6	21	79.2	3,771
Youngstown-Warren area	224	180	44	87	63	218	548.3	2,515
Mahoning	149	116	33	54	44	144	316.8	2,200
Trumbull	75	64	11	33	19	74	231.5	3,128
Canton area	161	140	21	52	48	153	363.9	2,378
Stark	161	140	21	52	48	153	363.9	2,378
Lorain-Elyria area	92	75	17	41	23	92	251.9	2,738
Lorain	92	75	17	41	23	92	251.9	2,738
Hamilton-Middletown area	61	53	8	25	20	61	220.5	3,615
Butler	61	53	8	25	20	61	220.5	3,615
Lima area	52	47	5	15	17	50	170.2	3,404
Allen	36	34	2	10	9	36	110.6	3,072
Putnam	6	3	3	1	3	4	29.8	7,450
Van Wert	10	10	-	4	5	10	29.8	2,980
Springfield area	56	44	12	17	20	52	139.8	2,688
Clark	56	44	12	17	20	52	139.8	2,688
Mansfield area	59	47	12	22	13	56	127.4	2,275
Richland	59	47	12	22	13	56	127.4	2,275

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 40	55 yrs. or more			
Metropolitan areas[2] (cont'd.)								
Steubenville-Weirton area(Ohio part)	37	28	9	14	14	36	101.2	2,811
Jefferson	37	28	9	14	14	36	101.2	2,811
Wheeling area (Ohio part)	32	26	6	10	12	32	81.9	2,559
Belmont	32	26	6	10	12	32	81.9	2,559
Huntington-Ashland area (Ohio part)	13	12	1	5	3	13	58.4	4,492
Lawrence	13	12	1	5	3	13	58.4	4,492
Nonmetropolitan counties[3]	722	617	105	243	237	695	2,383.2	3,429
Central city 25,000-49,999	181	157	24	66	63	173	534.4	3,089
Erie	35	32	3	10	10	33	74.2	2,248
Fairfield	26	22	4	13	7	26	68.4	2,631
Hancock	20	18	2	9	4	20	58.5	2,925
Licking	34	26	8	15	11	32	100.1	3,128
Marion	20	19	1	8	5	20	64.8	3,240
Muskingum	22	18	4	8	13	21	82.4	3,924
Scioto	24	22	2	3	13	21	86.0	4,095
Central city 10,000-24,999	364	315	49	116	113	353	1,137.6	3,223
Ashland	15	12	3	1	5	15	41.7	2,780
Ashtabula	31	29	2	10	13	30	100.4	3,347
Athens	13	13	-	4	5	12	51.9	4,325
Champaign	6	5	1	1	2	6	31.3	5,217
Columbiana	30	25	5	6	11	29	110.4	3,807
Coshocton	9	8	1	3	1	9	32.6	3,622

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond- ents	Non- respond- ents	Age in 1965		Profes- sionally active		
				Under 40	55 yrs. or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city 10,000-24,999 (cont'd.)								
Crawford	15	15	-	5	3	15	50.8	3,387
Darke	8	7	1	2	2	8	47.6	5,950
Defiance	15	14	1	5	7	14	34.1	2,436
Fayette	10	9	1	3	4	9	25.9	2,878
Guernsey	17	14	3	4	9	16	38.5	2,406
Huron	18	17	1	4	7	18	51.4	2,856
Knox	14	11	3	7	2	14	40.5	2,893
Logan	14	9	5	4	3	14	36.6	2,614
Ross	19	16	3	5	6	18	64.5	3,583
Sandusky	22	18	4	11	6	22	61.8	2,809
Seneca	26	20	6	9	7	26	62.4	2,400
Shelby	7	7	-	4	1	7	36.0	5,143
Tuscarawas	30	27	3	12	9	28	79.9	2,854
Washington	16	13	3	6	4	16	55.1	3,444
Wayne	29	26	3	10	6	27	84.2	3,119
Central city 5,000-9,999	108	86	22	37	35	104	368.8	3,546
Auglaize	11	11	-	5	2	10	38.8	3,880
Clinton	10	9	1	4	2	9	32.1	3,567
Gallia	9	8	1	3	5	8	26.9	3,362
Hardin	9	8	1	5	3	9	30.1	3,344
Henry	7	3	4	3	2	7	26.8	3,829
Highland	8	6	2	3	-	8	30.5	3,812
Hocking	6	5	1	-	2	6	20.4	3,400
Jackson	7	7	-	1	2	7	30.1	4,300

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965		Professionally active		
				Under 40	55 yrs. or more			
Nonmetropolitan counties[3/] (cont'd.)								
Central city 5,000-9,999 (cont'd.)								
Madison	8	7	1	2	5	7	28.6	4,086
Mercer	12	11	1	2	4	12	34.6	2,883
Ottawa	9	5	4	4	3	9	38.2	4,244
Williams	12	6	6	5	5	12	31.7	2,642
Central city 2,500-4,999	60	50	10	23	20	57	289.4	5,077
Brown	5	5	-	1	3	5	26.6	5,320
Carroll	1	1	-	-	-	1	21.7	21,700
Fulton	9	7	2	5	2	9	31.0	3,444
Harrison	2	1	1	1	-	2	17.4	8,700
Holmes	6	5	1	3	2	6	22.9	3,817
Meigs	3	3	-	2	-	3	21.6	7,200
Monroe	3	2	1	1	1	3	15.1	5,033
Morrow	4	3	1	1	1	4	20.4	5,100
Paulding	3	3	-	2	1	3	17.6	5,867
Perry	7	6	1	2	4	5	27.2	5,440
Pike	4	3	1	1	1	3	21.6	7,200
Union	7	6	1	3	2	7	23.9	3,414
Wyandot	6	5	1	1	3	6	22.4	3,733

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Ohio, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 40	55 yrs. or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city under 2,500	9	9	-	1	6	8	53.0	6,625
Adams	2	2	-	-	2	1	19.7	19,700
Morgan	4	4	-	-	3	4	12.7	3,175
Noble	2	2	-	1	1	2	10.5	5,250
Vinton	1	1	-	-	-	1	10.1	10,100

[1] Copyright 1965. Sales Management Survey of Buying Power.

[2] Ohio counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. Statistics presented for the interstate areas of Cincinnati, Toledo, Steubenville-Weirton, Wheeling and Huntington-Ashland include only those dentists located in the Ohio portion of the SMSA.

[3] Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN OKLAHOMA

During the 1965 registration period, 1,348 dentists registered with the Oklahoma Board of Governors of Registered Dentists. A total of 1,209 dentists responded to the survey, 90 percent of all those registered. Sixty-nine percent of the responding dentists are civilians located in Oklahoma, 25 percent are civilians located in other states, and 5 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Oklahoma

Location and military status	All dentists	Percent of dentists
Total	1,348	100
Respondents	1,209	90
Nonrespondents	139	10
Respondents	1,209	100
Civilians in Oklahoma	840	69
Civilians in another state	299	25
On active duty with Armed Forces	62	5
Not reported	8	1

Multiple licensure is quite common in Oklahoma, with almost two of every three dentists licensed in the State (64 percent) holding more than one license. Fifty-one percent of the dentists located in Oklahoma hold more than one license, with 41 percent licensed in one other state and 10 percent licensed in two or more other states. Multiple licensure is much more common among dentists registered in Oklahoma but located out of state; 36 percent hold two or more licenses in addition to their Oklahoma license.

Almost three-fourths of the licenses held in states outside of Oklahoma are held in adjacent states, predominantly Missouri, Kansas, and Texas. The remainder are held in 36 other states scattered across the Nation.

PROFESSIONAL TRAINING

Almost four-fifths of Oklahoma's dentists graduated from dental schools in adjacent states. The majority, 62 percent, graduated from dental schools in neighboring Missouri. Of these, the principal contributor has been the University of Missouri at Kansas City, which has provided half of the State's dentists, while Washington and St. Louis Universities have together supplied twelve percent. Baylor University, the only other major source of dentist manpower, has provided 15 percent of the State's dentists.

The remaining 22 percent of Oklahoma's dentists are graduates of 30 other dental schools located in more distant states. Among these, the University of Tennessee, the largest contributor, has supplied only 42 dentists, 5 percent of the dental force, while Northwestern University has provided 2 percent. In addition, the Universities of Iowa and Nebraska, Loyola University (New Orleans), and Meharry Medical College have each contributed approximately 1 percent of the total.

Dental School Attended and Year of Graduation
for Dentists in Oklahoma

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	840[1/]	-	243	296	297
		(Percent distribution by school)			
Missouri (Kansas City)	420	50	47	50	53
Baylor	129	15	19	20	8
Washington (St. Louis)	59	7	6	10	6
Tennessee	42	5	13	2	1
St. Louis	38	5	4	2	7
31 other schools	150	18	11	16	25

1/ Dental school attended for 2 dentists and year of graduation for 4 dentists not available. Percents based on known totals.

Some 16 percent of the survey respondents, 137 dentists, reported that they had completed one year or more of advanced training after their dental degree. Of the 71 dentists with advanced clinical training, 27 had completed a residency, and 44 an internship. Among the 96 dentists who reported advanced academic training, 61 had earned a master's or other advanced degree, and another 35 had received no additional degree but had completed one or more years of postgraduate study. These figures include 30 dentists who had taken both academic and clinical training.

DISTRIBUTION OF DENTISTS

Over one-half (55 percent) of the 840 responding dentists in Oklahoma are located in the 4 metropolitan areas. The 3-county Oklahoma City area has 241 dentists, 29 percent of all dentists in the State. The majority of these dentists (210) are concentrated in Oklahoma County, where Oklahoma City is located, while the two other counties, combined, have only 31 dentists. The 3-county Tulsa area has the second largest dental force (189 dentists), 23 percent of the State supply, with nine-tenths of these dentists located in Tulsa County. The two remaining metropolitan areas, Lawton and the Oklahoma portion of the interstate Ft. Smith area, have 2 percent and 1 percent of Oklahoma's dentists, respectively.

Distribution of Oklahoma Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	77	840	100
Metropolitan areas	9	459	55
Oklahoma City area	3	241	29
Tulsa area	3	189	23
Lawton area	1	20	2
Ft. Smith, Ark. area (Okla. part)	2	9	1
Nonmetropolitan counties	68	381	45
Central city 10,000-49,999	16	217	25
Central city 5,000- 9,999	17	90	11
Central city under 5,000	35	74	9

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Forty-five percent (381) of Oklahoma's dentists are located in the 68 nonmetropolitan counties of the State. The 16 counties with central cities of 10,000 or more persons have 217 dentists, or about one-fourth of the State's dental force. Of these, four counties--Garfield, Muskogee, Washington, and Kay--have more than 20 dentists, while five other counties--Carter, Okmulgee, Payne, Pittsburg, and Stephens--have between 10 and 20 dentists.

The 52 counties with central cities of fewer than 10,000 inhabitants have about one-fifth of the State's dentist supply. There are 90 dentists located in the 17 counties having populations from 5,000 to 9,999 in their central cities, while 74 dentists are scattered among the 35 counties with central cities of less than 5,000. Among these 52 counties, only 8 have more than 5 dentists, while 23 have fewer than 3 dentists.

AGE DISTRIBUTION OF DENTISTS BY AREA

With slightly more than one-half of the State's dentists under 45 years of age, the median age of Oklahoma dentists is 44.6 years. Only 21 percent of the dentists (175) are under 35, while almost one-third (272 dentists) are 55 or older. About one in every six, or 141 dentists, are 65 years old or more, and 97 have reached the age of 70.

Median Age and Age Distribution of Oklahoma Dentists
by County Group

County group	Median age	Percent of dentists			
		Under 35	35-44	45-54	55 & over
All counties	44.6	21	31	16	32
Metropolitan areas	43.1	23	34	16	27
Nonmetropolitan counties	48.1	19	26	16	39
Central city 10,000-49,999	46.1	17	30	18	35
Central city 5,000- 9,999	51.3	22	22	12	44
Central city under 5,000	54.3	19	18	15	48

In metropolitan areas, the median age of dentists is 43.1 years, a full five years lower than the median of 48.1 years for dentists in nonmetropolitan counties. There is very little difference in age distribution among the metropolitan areas. The youngest dentists as a group are found in the Oklahoma City and Lawton areas, where the median ages are quite similar, slightly over 42 years. In the Tulsa area, the median age is approximately one year older, 43.5 years.

There are greater differences in age among the nonmetropolitan county groups, with median ages tending to increase rapidly as the size of the central city declines. The median age of dentists in counties with central cities of 10,000-49,999 inhabitants is 46.1 years, with 35 percent of these dentists 55 years of age or more. By comparison, in counties with central cities under 5,000, the median age is 54.3 years, almost 10 years above the State average, since almost half of the dentists (48 percent) are 55 years of age or older.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 840 responding dentists in Oklahoma, 94 percent (787) are active in their profession, giving Oklahoma one professionally active dentist for every 3,064 persons. The 4 metropolitan areas together have 2,785 persons per active dentist, while the nonmetropolitan counties have a less favorable ratio of 3,400 persons per dentist.

Number of Persons per Active Dentist in Oklahoma

County group*	Professionally active dentists	Population	Persons per dentist
All counties	787	2,411,200	3,064
Metropolitan areas	430	1,197,400	2,785
Oklahoma City area	226	590,800	2,614
Tulsa area	178	455,500	2,559
Lawton area	19	107,700	5,668
Ft. Smith, Ark. area (Okla. part)	7	43,400	6,200
Nonmetropolitan counties	357	1,213,800	3,400
Central city 10,000-49,999	203	614,400	3,027
Central city 5,000- 9,999	84	284,300	3,385
Central city under 5,000	70	315,100	4,501

* See Appendix Table for individual county data.

Among the metropolitan areas, the 3-county Tulsa area has the best ratio, with 2,559 persons per dentist. Tulsa County itself has an even more favorable ratio of 2,373, compared to a combined ratio of 4,438 for the other two counties in that area. The ratio of the Oklahoma City area is 2,614 persons per dentist, quite similar to that of the Tulsa area. However, the ratios of the Lawton and Ft. Smith areas are considerably less favorable, 5,668 and 6,200, respectively.

Among the 68 nonmetropolitan counties, there are 11 counties with persons-per-dentist ratios under 2,500, yet 26 counties have ratios over 4,000, including eight with ratios in excess of 6,000 persons per dentist. Another six counties have no active dentists, according to available information.

UTILIZATION OF AUXILIARIES

Almost 9 of every 10 Oklahoma dental practitioners (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of all practitioners, including 77 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 32 percent of the dentists, with almost three-fourths of these dentists utilizing them full time. Only 16 percent of the dentists employ dental hygienists, and 6 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so on a part-time basis.

Oklahoma Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	784[1]	100	83	5
One or more auxiliaries	676	88	83	5
Assistant	639	83	77	6
Hygienist	121	16	7	9
Laboratory Technician	47	6	2	4
Secretary/Receptionist	247	32	23	9
Other type of personnel	14	2	1	1
No auxiliary	95	12	-	-

1/ Includes 13 dentists who did not report on auxiliary utilization.

Use of auxiliaries varies with the age of the dentist, becoming less frequent among dentists in the older age groups. Approximately 96 percent of Oklahoma dentists under age 45 employ some type of auxiliary. The proportion using auxiliaries decreases to 87 percent among dentists 45 to 64 years of age, and to 52 percent among dentists 65 and over.

Although dentists in nonmetropolitan counties are almost as likely to employ auxiliaries as are those located in metropolitan areas, the use of dental hygienists is considerably more common in metropolitan areas than in the remainder of the State. About 21 percent of the dentists in metropolitan areas report the employment of a hygienist, compared to only 9 percent of dentists located elsewhere.

OTHER SURVEY FINDINGS

- Ninety-eight percent of the professionally active dentists in Oklahoma are primarily engaged in private practice. The remaining two percent are either employed by governmental agencies or are engaged in other dental activities, such as taking advanced training.

- Dentists providing patient care in the year prior to the survey devoted an average of 39.8 hours per week to this activity for 48.1 weeks during the year. About one dentist in eight worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

- About 10 percent of the respondents reported that they limit their practice to a dental specialty, primarily to orthodontics, followed by oral surgery and pedodontics. Fifteen percent of the dentists in metropolitan areas limit their practice as compared to 4 percent in nonmetropolitan counties.

- Only seven percent (60) of the responding dentists have practiced as civilian dentists in one of 18 other states immediately prior to assuming their present Oklahoma location. More than half of these dentists came from adjacent states, primarily Kansas, Missouri, and Texas.

- Two-thirds of the 299 dentists licensed in Oklahoma but located in other states are in one of the six adjacent states, predominantly Texas, Kansas, and Missouri. The remainder are scattered throughout 26 other states across the Country.

June 1968.

APPENDIX TABLE

Selected Data on Dentists in Oklahoma, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or more			
All counties	840	282	272	787	2,411.2	3,064
Metropolitan areas 2/	459	173	122	430	1,197.4	2,785
Oklahoma City area	241	98	63	226	590.8	2,614
Canadian	9	3	3	8	24.2	3,025
Cleveland	22	9	4	21	50.1	2,386
Oklahoma	210	86	56	197	516.5	2,622
Tulsa area	189	65	51	178	455.5	2,559
Creek	11	3	4	11	39.0	3,545
Osage	5	2	3	5	32.0	6,400
Tulsa	173	60	44	162	384.5	2,373
Lawton area	20	9	4	19	107.7	5,668
Comanche	20	9	4	19	107.7	5,668
Fort Smith area (Okla. part)	9	1	4	7	43.4	6,200
Le Flore	4	-	3	3	26.3	8,767
Sequoyah	5	1	1	4	17.1	4,275
Nonmetropolitan counties 3/	381	109	150	357	1,213.8	3,400
Central city 25,000-49,999	68	21	24	65	165.7	2,549
Garfield	24	7	11	22	55.8	2,536
Muskogee	21	6	5	21	62.1	2,957
Washington	23	8	8	22	47.8	2,173

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Oklahoma, by Location

County group and county	Civilian dentists: Total	Age in 1965: Under 40	Age in 1965: 55 years or more	Professionally active	Population 1/ (in 000's)	Persons per active dentist
Nonmetropolitan counties 3/ (cont'd.)						
Central city 10,000-24,999	149	40	51	138	448.7	3,251
Bryan	6	1	2	5	22.2	4,440
Carter	15	3	7	14	41.2	2,943
Grady	6	1	3	6	28.2	4,700
Jackson	10	5	3	9	34.0	3,778
Kay	22	6	8	19	52.6	2,768
Okmulgee	17	6	5	16	35.5	2,219
Ottawa	9	3	3	9	26.8	2,978
Payne	16	3	6	15	43.1	2,873
Pittsburg	11	2	3	11	31.3	2,845
Pontotoc	8	1	3	8	29.2	3,650
Pottawatomie	10	5	2	9	40.4	4,489
Seminole	8	1	4	6	23.7	3,950
Stephens	11	3	2	11	40.5	3,682
Central city 5,000-9,999	90	29	39	84	284.3	3,385
Beckham	9	2	7	9	16.0	1,778
Caddo	5	1	3	5	25.8	5,160
Cherokee	4	2	-	4	17.2	4,300
Choctaw	3	1	1	3	13.7	4,567
Craig	5	2	3	4	15.4	3,850
Custer	7	2	4	7	21.2	3,029
Garvin	8	3	1	8	27.7	3,463
Hughes	3	2	1	3	12.8	4,267
Kiowa	4	-	3	3	13.0	4,333
Logan	4	1	3	3	17.0	5,667
Mayes	3	-	-	3	20.2	6,733

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Oklahoma, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city 5,000-9,999 (cont'd.)						
Noble	4	1	3	3	9.7	3,233
Rogers	6	3	2	6	21.1	3,517
Texas	7	3	4	6	14.3	2,383
Tillman	3	1	-	3	13.4	4,467
Woods	5	1	2	5	11.5	2,300
Woodward	10	4	2	9	14.3	1,589
Central city 2,500-4,999	47	14	23	43	191.7	4,458
Atoka	2	-	1	1	8.8	8,800
Blaine	4	1	2	4	10.9	2,725
Cotton	1	-	1	-	6.9	-
Greer	3	1	2	3	7.7	2,567
Harmon	2	1	1	2	5.0	2,500
Kingfisher	6	2	4	5	9.5	1,900
Lincoln	6	1	3	6	17.2	2,867
McClain	2	1	-	2	11.8	5,900
McCurtain	3	1	1	3	23.5	7,833
McIntosh	2	-	-	2	10.2	5,100
Marshall	2	1	1	2	6.8	3,400
Murray	2	-	1	2	10.5	5,250
Nowata	3	1	2	2	10.0	5,000
Okfuskee	-	-	-	-	9.8	-
Pawnee	3	1	2	3	9.7	3,233
Wagoner	4	2	1	4	15.2	3,800
Washita	2	1	1	2	18.2	9,100

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Oklahoma, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Under 40	55 years or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city under 2,500	27	5	13	27	123.4	4,570
Adair	1	-	-	1	12.3	12,300
Alfalfa	3	-	3	3	7.3	2,433
Beaver	-	-	-	-	6.8	-
Cimarron	1	-	-	1	4.4	4,400
Coal	-	-	-	-	4.6	-
Delaware	3	-	1	3	12.5	4,167
Dewey	-	-	-	-	4.9	-
Ellis	2	-	1	2	4.7	2,350
Grant	4	-	3	4	6.9	1,725
Harper	1	1	-	1	5.9	5,900
Haskell	1	-	-	1	7.6	7,600
Jefferson	2	-	2	2	7.0	3,500
Johnston	1	-	1	1	7.5	7,500
Latimer	1	-	-	1	7.0	7,000
Love	1	1	-	1	5.2	5,200
Major	4	2	1	4	6.7	1,675
Pushmataha	2	1	1	2	7.9	3,950
Roger Mills	-	-	-	-	4.2	-

1/ Copyright 1965. Sales Management Survey of Buying Power. Further reproduction is forbidden.

2/ Oklahoma counties in the latest 1967 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. For the interstate Fort Smith SMSA, statistics are presented only for dentists located in the Oklahoma portion.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

Survey highlights

More than 2,300 dentists registered with the Oregon State Board of Dental Examiners during its 1965 registration period.

Three fifths of those registering, about 1,390 dentists, were civilians located in Oregon.

Two thirds of the 870 civilian dentists licensed in Oregon but located in another state were in the neighboring states of Washington and California.

Slightly more than four in every five of the dentists in Oregon received their dental degrees from the University of Oregon.

Advanced professional training beyond their dental degrees was reported by one in every six Oregon dentists. Proportionately more of those who graduated from dental school after 1940 had taken advanced training than those graduated prior to that time.

Seven in every ten dentists in Oregon were located in one of the state's three metropolitan areas—53 percent in the Portland area, 9 percent in the Eugene area and 8 percent in the Salem area.

The median age in 1965 of all Oregon dentists was 44.1 years. However, Portland area dentists on the average were more than 2 years older than those in the remainder of the state.

At the time of the survey about 1,300 dentists, 94 percent of all those in the state, were active in their profession.

The active dentists were somewhat unevenly distributed among the population residing in Oregon. The 3-county Portland metropolitan area had 52 percent of the state's active dentists as compared with only 41 percent of the population. Conversely, the remaining 33 counties in the state, with 59 percent of the population, had only 48 percent of the dentists. As a result, the Portland area had one active dentist for every 1,164 residents, while the remainder of the state had a comparatively less favorable ratio, or one dentist for every 1,793 persons.

Almost ninety-five percent of the professionally active dentists were primarily in private practice. About one half of the remaining active dentists were on the staff of the dental school.

One in every ten practitioners reported they limited their practices to a dental specialty, primarily to orthodontics or oral surgery.

Almost one half of the self-employed practitioners devoted at least 48 weeks of the year to their practice and worked 40 hours or more per week. However, proportionately twice as many dentists under 35 years of age (6 in every 10) spent this amount of time in practice as did those 55 years or older (only 3 in every 10).

Auxiliaries were employed by 73 percent of the practicing dentists. Utilization of auxiliaries varied according to the age of the dentist and was most frequent among dentists between the ages of 35 and 54 (4 out of 5 employed at least one auxiliary).

Almost 70 percent of the practitioners employed dental assistants, almost always on a full-time basis. Dental hygienists, on the other hand, were employed by only 15 percent of the practicing dentists, most frequently on a part-time basis.

The survey

A nationwide program is being conducted by the American Association of Dental Examiners under a contract with the Division of Dental Health, U.S. Public Health Service to assist states in developing information about their professional and auxiliary manpower. As a part of the national program, a study was undertaken in 1965 by the Oregon State Board of Dental Examiners to develop needed information about the characteristics of dentists licensed in Oregon. The preparation and publication of this report, which summarizes the results of the study conducted by the Oregon Board, has been made possible through the cooperation of the American Association of Dental Examiners and the Resource Analysis Branch of the Division of Dental Health.

The Oregon State Board of Dental Examiners registered more than 2,300 dentists during its 1965 registration period. Almost three fifths of those registering, about 1,390 dentists, were civilians located in Oregon. Oregon licenses were also held by 870 civilian dentists located in other states or abroad and by 70 dentists on active duty in the armed forces.

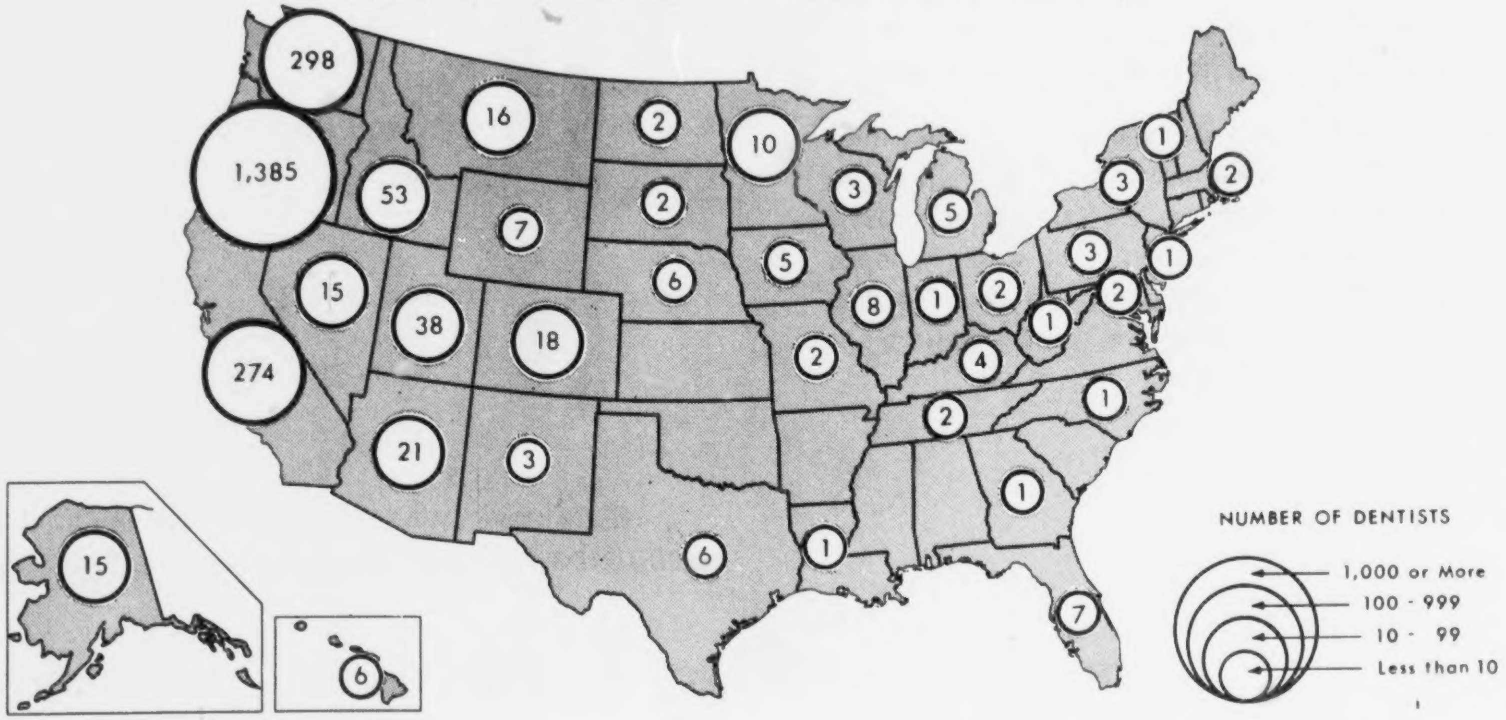
The Oregon Board sent each licensed dentist a survey questionnaire with the 1965 registration form. Of all dentists registering, 73 percent returned the questionnaire. However, proportionately more of the dentists actually located in Oregon participated in the survey—1,072 dentists or 77 percent returned their questionnaires. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. This information was obtained either from records of the Oregon Board or from the 1966 American Dental Directory published by the American Dental Association.

Civilian dentists licensed in Oregon

Two thirds of the civilian dentists licensed in Oregon but located in another state were in the neighboring states of Washington and California. Eighty-one of the 603 out-of-state respondents reported they had been practicing as a civilian in Oregon before moving to their present location in another state. Of the dentists reporting such a relocation, 44 percent were in California at the time of the survey and 35 percent were in Washington.

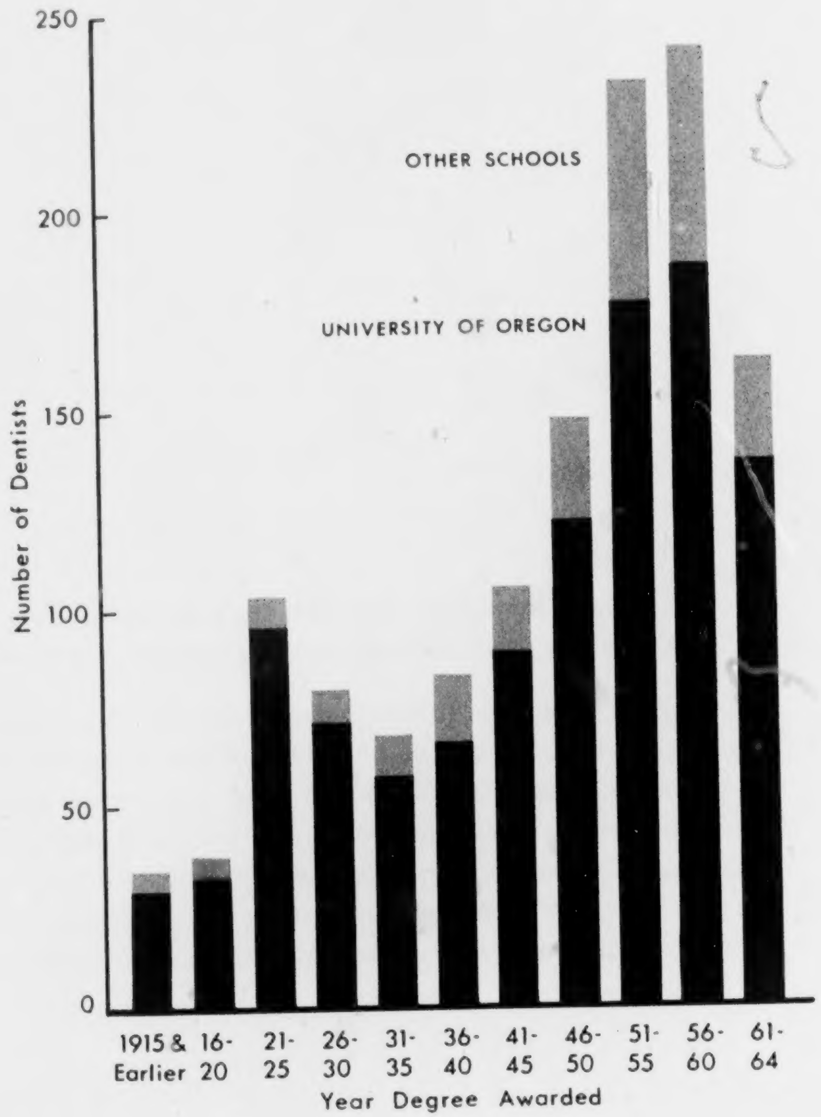
Many of the responding dentists located in Oregon when the survey was conducted also indicated either present or past professional ties to Washington or California. Of the 408 Oregon dentists who reported they were also licensed to practice in another state, 45 percent maintained licenses in Washington and 20 percent in California. In addition, 145 dentists reported that immediately prior to coming to their present Oregon location they had been established professionally as a civilian in another state. Nineteen percent of these dentists had moved to their present Oregon location from Washington and 17 percent had come from California.

LOCATION OF DENTISTS LICENSED IN OREGON: 1965



Professional training of Oregon dentists

DENTAL SCHOOL ATTENDED BY OREGON DENTISTS
AND YEAR DENTAL DEGREE WAS AWARDED



The majority of the dentists in Oregon received their dental degrees from the University of Oregon. This one school has trained slightly more than four fifths of the 1,385 dentists in the state. The University of Oregon has been graduating dentists since before the turn of the century and, as a result, has been the major contributor to the state's dentist supply through the years.

While only 18 percent of the Oregon dentists received their dental education at schools in other states, they were awarded their dental degrees by 41 different schools. The five dental schools in the adjacent states of California and Washington were attended by only one percent of the Oregon dentists. The University of Minnesota and Northwestern University were the most frequently attended out-of-state schools.

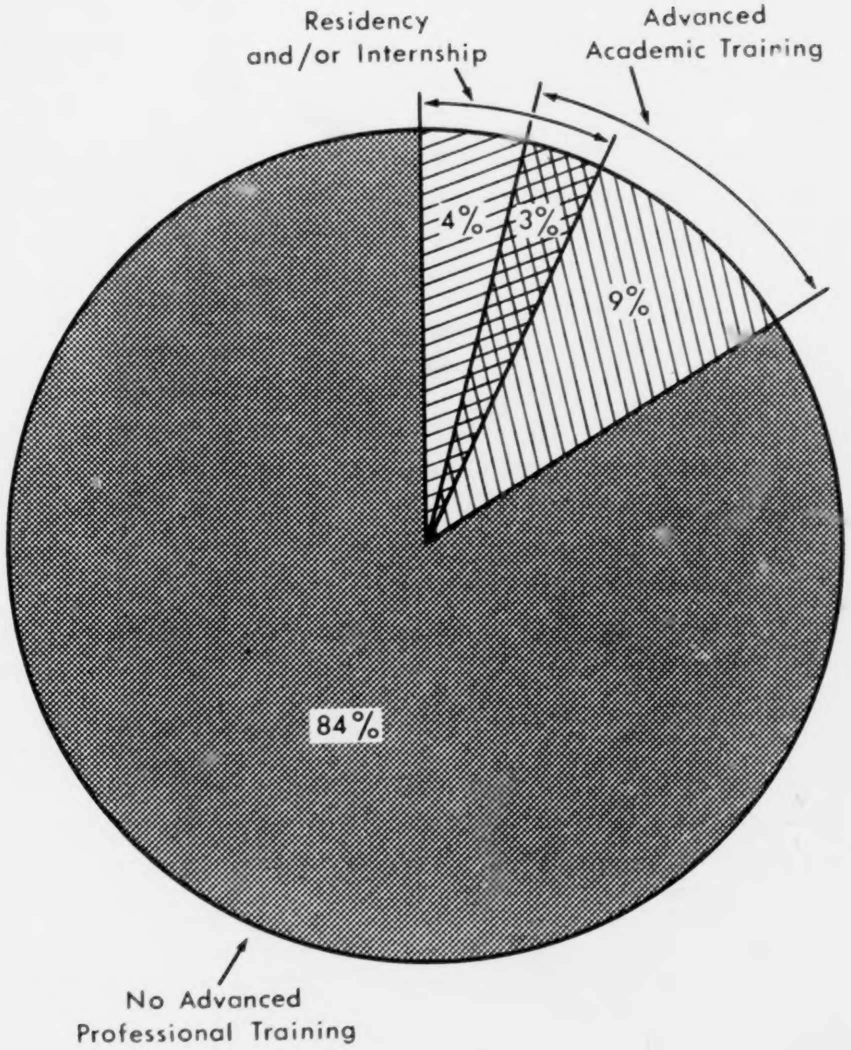
One half of all the dentists in Oregon received their dental degrees after 1950. Relatively more of these dentists attended out-of-state schools than did those who completed their dental education in earlier years. While 85 percent of all the dentists completing dental school in 1950 or earlier attended the University of Oregon, only 78 percent of those graduating after that year received their degrees from the Oregon school.

There is a growing tendency among Oregon dentists to take professional training beyond their dental degrees. In total, one in every six dentists reported they had taken one or more years of advanced professional training. Yet, 18 percent of those graduated from dental school after 1940, as compared with only 11 percent who completed dental school in 1940 or earlier, had continued their training.

A few Oregon dentists (3 percent) reported taking both advanced academic and clinical training, but in total, 12 per cent had taken academic training, 2 percent had completed both internships and residencies and 5 percent had completed their internships only. More than one half of those who continued their academic training earned at least a master's degree in addition to their doctor's degree in dentistry.

HIGHEST LEVEL OF ADVANCED PROFESSIONAL TRAINING COMPLETED BY OREGON DENTISTS

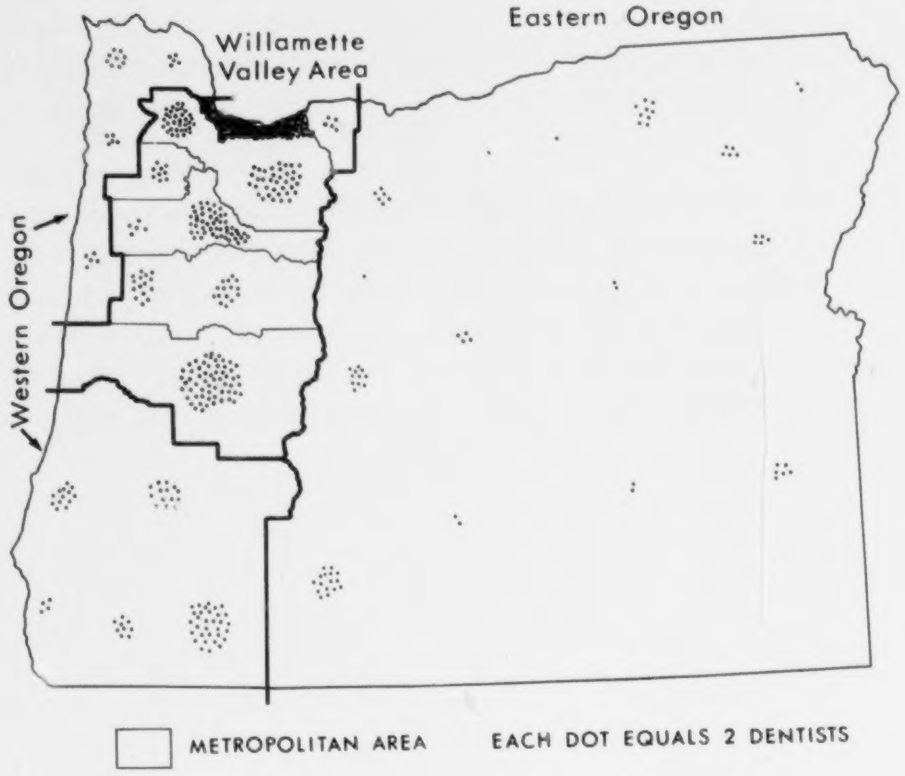
(Percent of Dentists)



Location and age of Oregon dentists

Seven in every ten of the 1,385 licensed dentists in Oregon were located in the state's three metropolitan areas: Portland, Eugene and Salem. More than half (about 740) of all the dentists in the state are in the Portland area alone, including 43 percent in Multnomah County, and 5 percent each in Clackamas and Washington Counties. Lane County, which is defined as the Eugene metropolitan area, was the location of 120 dentists, or 9 percent of all those in the state. The 2-county Salem area had almost as many dentists, seven percent in Marion County and one percent in Polk County.

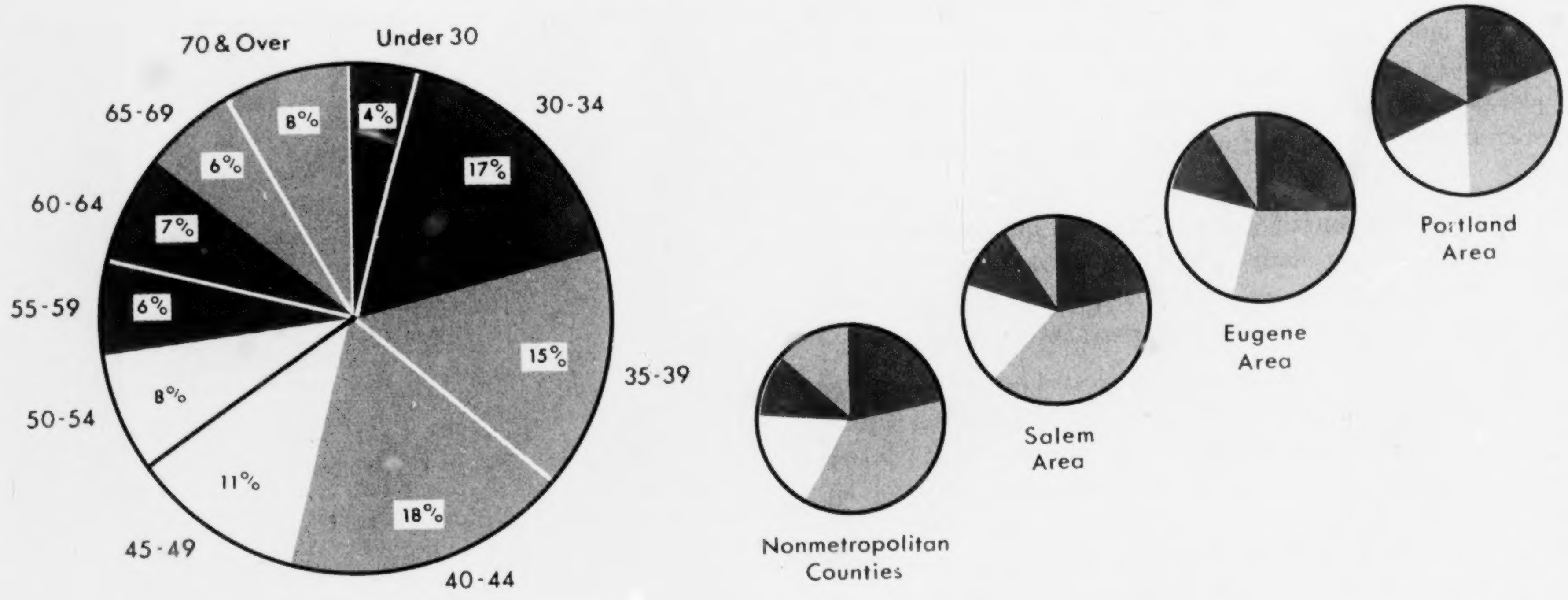
DISTRIBUTION OF OREGON DENTISTS: 1965
(Plotted by County)



In total, Oregon's Willamette Valley area contained more than three fourths of the state's dentist supply. In addition to the dentists in the three metropolitan areas, another 6 percent were located in the Valley's four nonmetropolitan counties (Linn, Benton, Hood River and Yamhill). By comparison, only 14 percent were in Western Oregon, which is defined to include the six coastal counties of Clatsop, Coos, Curry, Douglas, Lincoln, and Tillamook, as well as the three inland counties of Columbia, Josephine and Jackson. Eastern Oregon, which includes the remaining 17 counties in the state, had only 10 percent of the state's dentists.

Among the four nonmetropolitan counties in the Willamette Valley, the largest number of dentists were located in Linn and Benton Counties, which are situated between the Salem and Eugene areas. Each of these two counties had about 30 dentists, or three times as many as in the Salem area's Polk County, the metropolitan county with the least number of dentists. By far the greatest number of dentists in Western Oregon were located in Jackson County which had more than 60 dentists. Coos and Douglas Counties, with about 25 dentists each, were the only other counties in the Western section with more than 20 dentists. Among the Eastern Oregon counties only Klamath and Deschutes Counties had as many as 20 dentists. Two of the remaining 15 counties in the Eastern section, Sherman and Wheeler Counties, apparently had no licensed dentists.

AGES OF OREGON DENTISTS: 1965



With more than one half of the dentists under 45 years of age in 1965, the median dentist age in Oregon was 44.1 years. One third of the dentists were between the ages of 35 and 44, a figure considerably higher than for either the 45 to 54 or 55 to 64 years age group. Dentists in the youngest age groups, that is, under 35 years, outnumbered those who were 65 years or older.

The average dentist age varied somewhat among the various areas of the state. The Portland area, where about one half of the dentists were located, had proportionately fewer young dentists than did either of the other two metropolitan areas or the group of nonmetropolitan counties. The median age of the Portland area's dentists, therefore, was older—45.2 years, as compared with 43.1 for the nonmetropolitan counties, 42.7 for the Eugene area and only 41.6 for the Salem area.

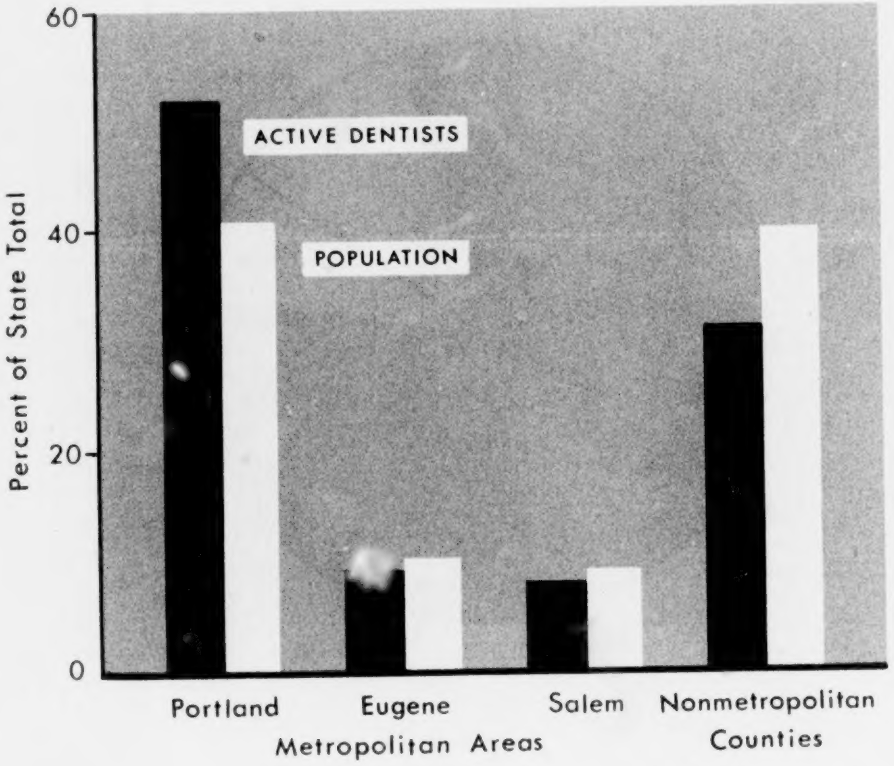
The ages of dentists also varied among individual counties, sometimes considerably. For example in the 3-county Portland area, Multnomah County, which contains the city of Portland, had relatively more older dentists than young ones, while the suburban counties of Clackamas and Washington had relatively more young dentists. In Multnomah County there were 2 dentists aged 55 or older for every dentist under 35. In contrast, Clackamas County had 3 dentists under 35 for every 2 dentists 55 and over, and Washington County had 3 dentists in the younger age group for each dentist in the older group.

Active dentists in relation to the Oregon population

At the time of the survey about 1,300 dentists were active in their profession in Oregon. These dentists represented 94 percent of all those in the state. Another 4 percent were retired, while only a negligible number were active in nondental activities. The professional status of 2 percent of the dentists was not obtainable.

The concentration of dentists in the metropolitan areas resulted in a somewhat uneven distribution of the active dentists among the state's population. The Portland metropolitan area had proportionately more dentists than population—52 percent of the state's active dentists as compared with only 41 percent of the population. As a result of this disproportionate distribution of dentists and population, there was one dentist for every 1,164 persons residing in the Portland area, while the remainder of the state had a less favorable ratio of one dentist for every 1,793 persons. The ratios for the Salem and Eugene metropolitan areas were virtually the same, 1,556 and 1,559 respectively, but less favorable than for the Portland area.

DISTRIBUTION OF DENTISTS AND POPULATION, BY AREA: 1965

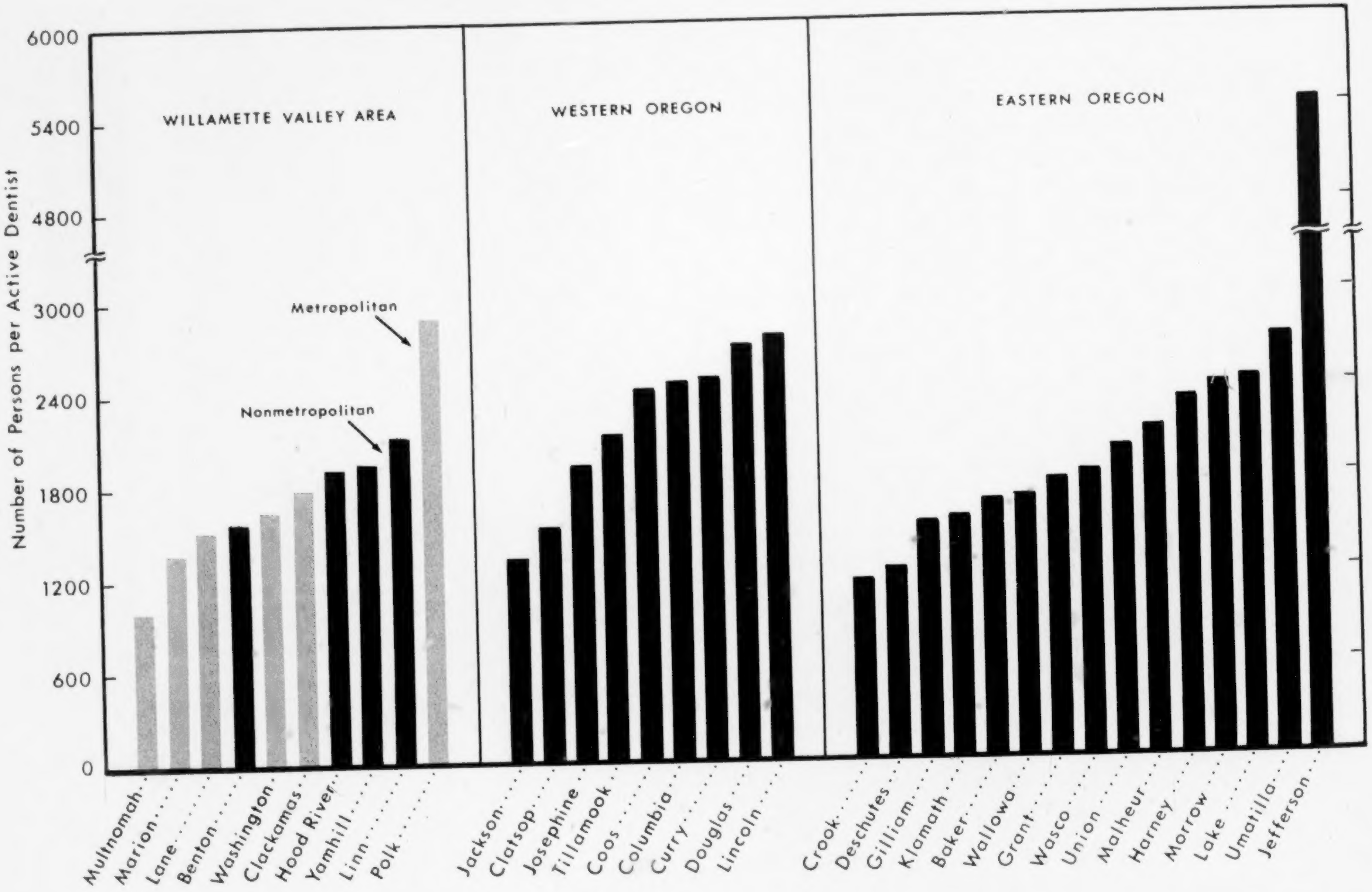


If all three metropolitan areas are considered together, they had 69 percent of the active dentists and 60 percent of the population, or 1,263 persons per dentist as compared to an average of 1,944 persons for every active dentist in the nonmetropolitan counties. The nonmetropolitan ratio, however, varied only slightly among the three geographical sections of the state—ranging from an average of 1,894 persons per dentist in the 4 nonmetropolitan counties in the Willamette Valley area to only 1,914 persons in Eastern Oregon and 1,990 persons in Western Oregon.

The persons-per-active dentist ratios varied considerably more among individual counties. Among the six metropolitan counties the population per dentist ranged from 1,017 in the Portland area's Multnomah County to 2,960 in the Salem area's Polk County.

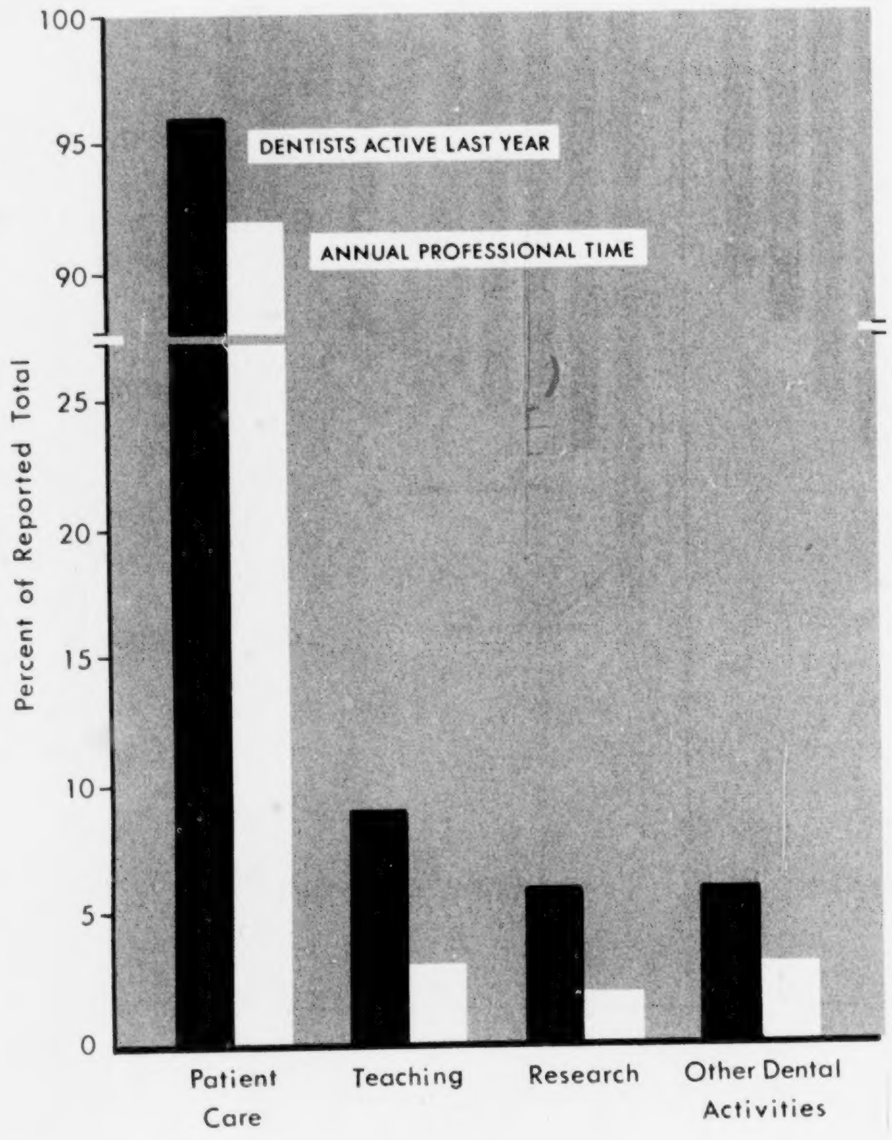
Two counties in Eastern Oregon had the extremes in persons-per-active dentist ratios among the state's 28 nonmetropolitan counties which had professionally active dentists. Crook County had the most favorable ratio of 1,188 persons while the state's least favorable ratio of 5,450 occurred in Jefferson County. However, in more than two thirds of the nonmetropolitan counties the ratios were between 1,500 and 2,499 persons.

NUMBER OF PERSONS PER ACTIVE DENTIST FOR OREGON COUNTIES: 1965



Professional characteristics of Oregon dentists

PROFESSIONAL ACTIVITY IN 1964



Almost all of the dentists who reported on their professional activities in Oregon during the year preceding the survey indicated that they spent at least a portion of their time in providing dental care to patients. On the average, they spent 38.3 hours per week at this activity for 46.8 weeks during the year. Total time spent by these dentists in patient care accounted for 92 percent of the aggregate professional time reported for the year by all active dentists.

Professional activities other than patient care were also reported by some Oregon dentists; however, only 8 percent of the total professional time during the year was spent in all activities other than patient care. Nine percent of the dentists were teaching either in the dental school or in one of the schools in Oregon which train dental assistants and six percent were engaged in dental research. Other dental activities were reported by six percent of the dentists, including those who were taking advanced professional training, serving as consultants to the Veterans Administration and other organizations, or serving in official capacities in various state-wide and local dental organizations.

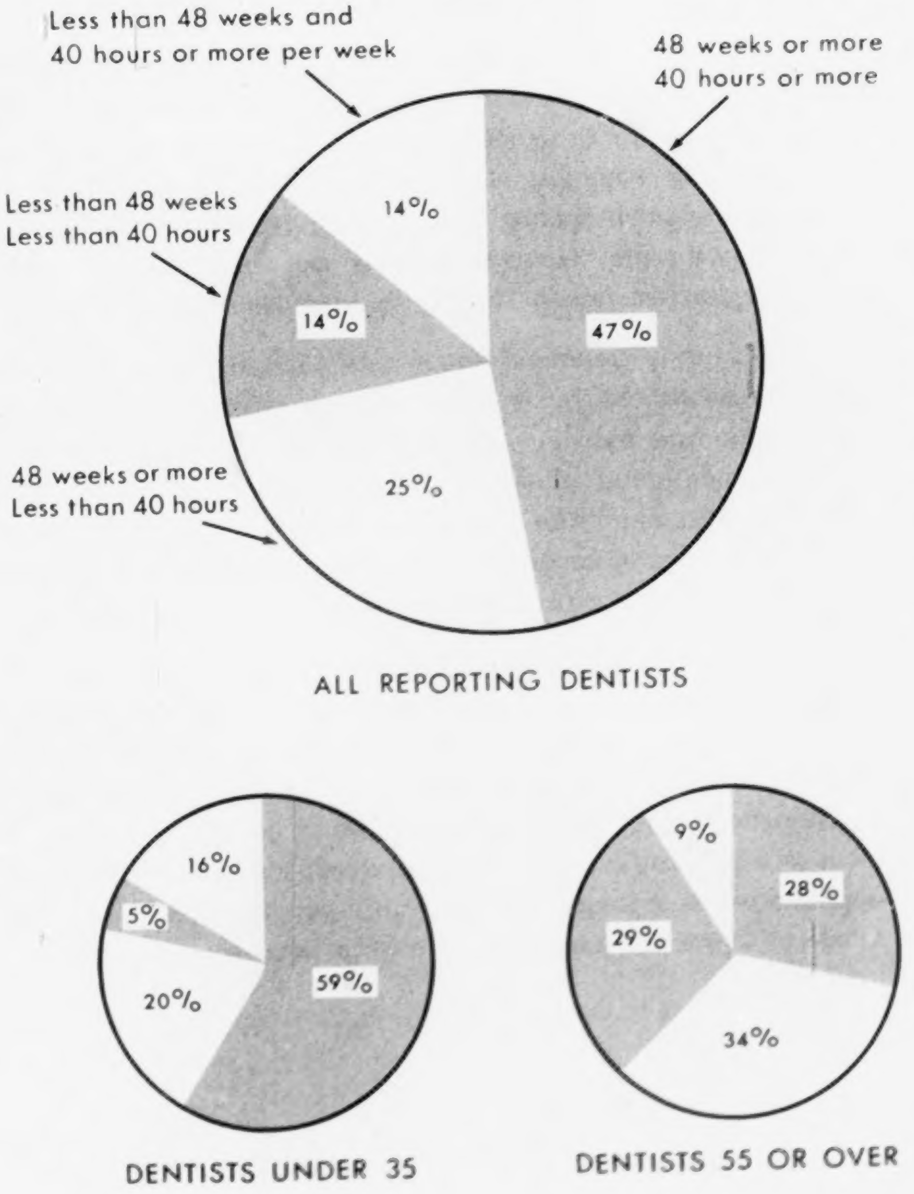
Almost all of the dentists who were professionally active at the time of the survey reported that they were primarily in private practice—ninety-three percent were self-employed and one percent were employed by other dentists. About one half of the remaining dentists who were not primarily in private practice were on the staff of the dental school.

About one in every ten active dentists indicated they were engaged in more than one type of dental employment. For example, one in every twenty-five active dentists was primarily engaged in his own practice but also was a member of the dental school faculty.

By far the majority of the dentists were in general practice. However, one in every ten reported that they limited their practices to a dental specialty, primarily orthodontics or oral surgery (each was reported by 3 percent of the dentists). Limited practices were more frequently reported by dentists in the Salem metropolitan area than by those in other sections of the state. Seventeen percent of the Salem area dentists reported limiting their practices as compared with 12 percent of the dentists in the Portland area, and only 9 percent in the Eugene area and 4 percent in the nonmetropolitan counties.

Almost one half (47 percent) of the self-employed practitioners devoted at least 48 weeks of the year to their practices and worked 40 hours or more per week. However, proportionately more younger dentists than older dentists spent this much time in their practices. For example, almost 6 of every 10 dentists under 35 years of age spent 40 hours or more for at least 48 weeks in the year in their practices, while only about 3 in every 10 dentists 55 years or older practiced this amount of time. Furthermore, another 3 in every 10 dentists in this older age group not only practiced less than 48 weeks of the year but also spent less than 40 hours a week in their practices, whereas only 1 in every 20 dentists under age 35 spent so little time in practice.

TIME SPENT IN PRIVATE PRACTICE IN 1964



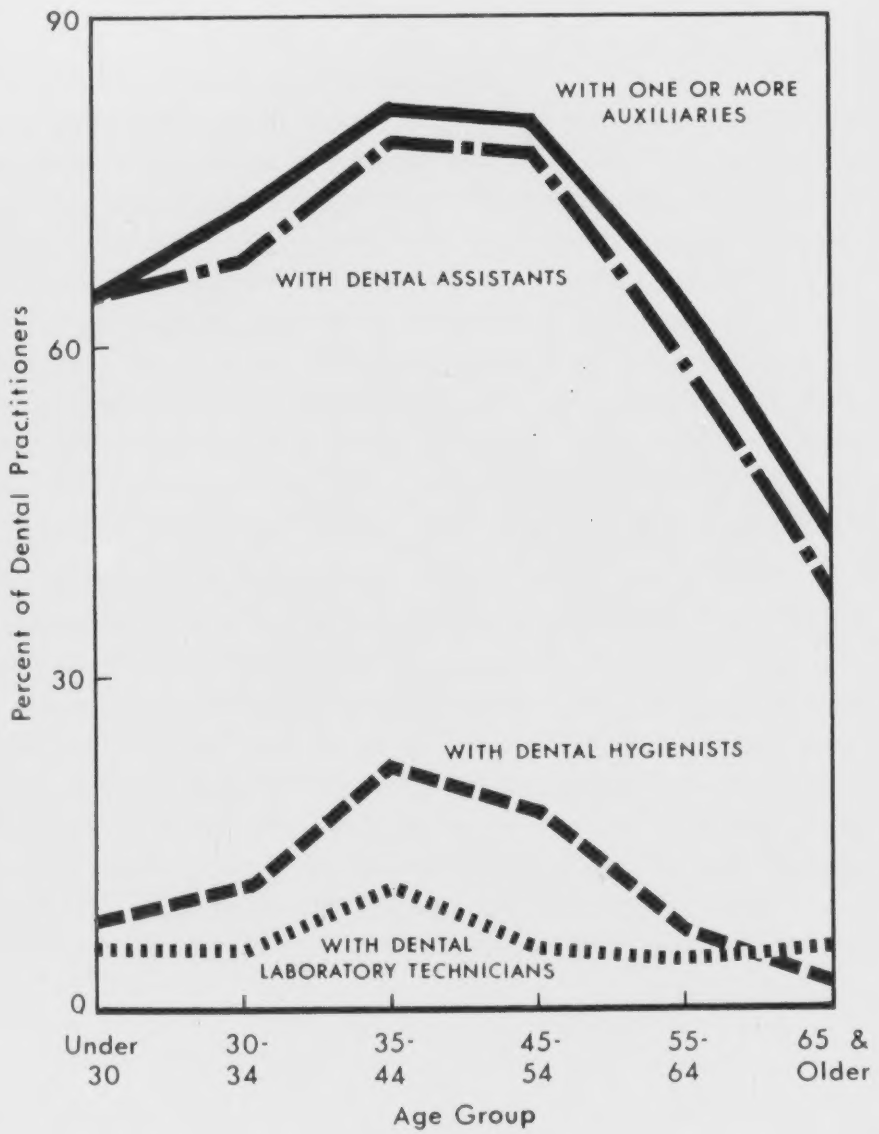
ALL REPORTING DENTISTS

DENTISTS UNDER 35

DENTISTS 55 OR OVER

Utilization of auxiliaries by Oregon dentists

UTILIZATION OF AUXILIARIES BY AGE OF DENTAL PRACTITIONERS: 1965



Almost three fourths of all practicing dentists employed one or more auxiliaries, yet the utilization of auxiliaries varied considerably according to the age of the dentist. About four fifths of those between the ages of 35 and 54 utilized at least one auxiliary in their practices. Among the younger and older dentists, however, the use of auxiliaries was less frequent—about 7 of every 10 dentists under 35 years old employed an auxiliary, while only slightly more than one half of those 55 years or older did so.

A somewhat similar age pattern occurred in the utilization of each type of auxiliary. However, many more dentists in every age group employed dental assistants than any other type of personnel. Almost 70 percent of all the dental practitioners utilized dental assistants in their practices as compared with only 19 percent with secretaries or receptionists, 15 percent with dental hygienists and 7 percent with dental laboratory technicians.

Not only did more dentists employ dental assistants in their practices than any other type of auxiliary, but they also more frequently employed them full time. Among dentists with assistants, 95 percent employed at least one full time. By comparison, the dental hygienist, the auxiliary least likely to be employed full time, was utilized full time by only 18 percent of the dentists who employed a hygienist in their practices.

The utilization of dental assistants and laboratory technicians was somewhat less frequent in the Portland area than in the remainder of the state. However, dental hygienists were employed by a larger proportion of the Portland area dentists than by those in other areas.

Appendix tables

Table 1.–Survey Response

Military status and location	Licensed dentists		Survey respondents	
	Number	Percent	Number	Percent of total
Total dentists	2,329[1]	100	1,697[1]	73
Civilian dentists in Oregon	1,385	60	1,072	77
Civilians in another state	867	37	603	70
On active duty in armed forces	71	3	16	23

[1] Total includes 6 dentists whose status was not obtainable.

Table 2.–Dental School Attended, by Year Dental Degree was Awarded

Dental school attended	Number of dentists	Year dental degree was awarded			
		All years	After 1950	1941-1950	1940 or earlier
Total number	1,385	—	671	260	420
		(Percent distribution by school)			
University of Oregon	1,087	82	78	83	86
University of Minnesota	45	3	5	2	3
Northwestern University	37	3	3	3	2
The Creighton University	23	2	3	1	1
State University of Iowa	14	1	1	1	1
Loyola University of Chicago	13	1	1	1	1
Marquette University	12	1	2	—	1
35 other dental schools	96	7	7	9	5

Note: Individual items presented in tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire, or, in the case of nonrespondents, because data were not obtainable for all dentists. For each item where percentages are shown, they are based on the number of dentists for whom the data are known.

Table 3.–Location of Dentists in Oregon, by Selected Characteristics

Area and county	Licensed dentists				Population		Survey respondents	
		Age in 1965						
	Total	Under 35	55 years or more	Profes-sionally active[1]	Total[2] (in 000's)	Per active dentist	Total	Percent of practitioners using auxiliaries
All areas	1,385[3]	264	349	1,299	1,907.0	1,468	1,072	73
Willamette Valley area	1,053	201	277	980	1,290.5	1,317	800	71
Metropolitan areas[4]	967	182	258	897	1,133.3	1,263	734	71
Portland metropolitan area	737	132	217	671	781.2	1,164	560	69
Clackamas	74	21	14	69	125.6	1,820	50	63
Multnomah	595	91	196	538	547.3	1,017	457	69
Washington	68	20	7	64	108.3	1,692	53	76
Salem metropolitan area	110	22	19	108	168.1	1,556	76	77
Marion	100	20	16	98	138.5	1,413	67	78
Polk	10	2	3	10	29.6	2,960	9	67
Eugene metropolitan area	120	28	22	118	184.0	1,559	98	79
Lane	120	28	22	118	184.0	1,559	98	79
Nonmetropolitan counties	86	19	19	83	157.2	1,894	66	72
Benton	29	8	6	29	46.4	1,600	21	67
Hood River	9	1	4	7	13.7	1,957	6	60
Linn	30	8	3	30	63.8	2,127	27	74
Yamhill	18	2	6	17	33.3	1,959	12	83

Table 3.–Location of Dentists in Oregon, by Selected Characteristics (cont'd)

Area and county	Licensed dentists				Population		Survey respondents	
		Age in 1965						
	Total	Under 35	55 years or more	Professionally active[1]	Total[2] (in 000's)	Per active dentist	Total	Percent of practitioners using auxiliaries
Western Oregon	187	37	43	178	354.3	1,990	154	79
Clatsop	18	2	6	16	25.0	1,562	12	92
Columbia	10	2	4	9	22.5	2,500	8	75
Coos	25	2	5	23	56.4	2,452	22	84
Curry	7	1	4	6	15.1	2,517	5	75
Douglas	27	4	5	27	73.8	2,733	22	86
Jackson	64	19	10	63	86.0	1,365	56	74
Josephine	17	4	2	17	33.2	1,953	12	83
Lincoln	10	1	3	9	25.1	2,789	9	75
Tillamook	9	2	4	8	17.2	2,150	8	71
Eastern Oregon	141	25	28	137	262.2	1,914	114	73
Baker	10	—	4	10	16.9	1,690	8	50
Crook	8	1	1	8	9.5	1,188	6	60
Deschutes	21	7	5	20	25.0	1,250	20	72
Gilliam	2	1	—	2	3.1	1,550	2	50
Grant	4	—	2	4	7.3	1,825	4	33
Harney	3	1	1	3	7.0	2,333	3	100
Jefferson	2	—	—	2	10.9	5,450	2	100
Klamath	31	5	4	31	49.1	1,584	21	71
Lake	3	1	—	3	7.4	2,467	2	50
Malheur	11	3	3	11	23.6	2,145	8	86
Morrow	2	1	—	2	4.9	2,450	2	100

Table 3.–Location of Dentists in Oregon, by Selected Characteristics (cont'd)

Area and county	Licensed dentists				Population		Survey respondents	
	Total	Age in 1965		Profes-sionally active[1]	Total[2] (in 000's)	Per active dentist	Total	Percent of practitioners using auxiliaries
		Under 35	55 years or more					
Eastern Oregon (cont'd.)								
Sherman	–	–	–	–	3.5	–	–	–
Umatilla	18	1	3	16	44.1	2,756	16	64
Union	10	–	1	9	18.2	2,022	9	75
Wallowa	4	2	1	4	6.9	1,725	3	100
Wasco	12	2	3	12	22.3	1,858	8	100
Wheeler	–	–	–	–	2.5	–	–	–

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[1] Includes all responding dentists who reported they were professionally active in Oregon at the time of the survey and all nonrespondents known to be under 70 years of age.

[2] Copyright 1965, Sales Management Survey of Buying Power; further reproduction is forbidden.

[3] Includes four dentists who failed to give their county location.

[4] Oregon counties included in the latest 1966 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of survey data. Statistics are presented only for dentists in the Oregon portion of the interstate Portland SMSA.

Table 4.–Age in 1965, by Location

Age in 1965	All areas	Portland metropolitan area	Remainder of state			
			Total	Eugene area	Salem area	Other counties
Number of dentists	1,385	737	644	120	110	414
Percent of dentists	100	100	100	100	100	100
Under 35	21	19	22	26	21	21
35-44	33	30	36	30	40	37
45-54	19	19	20	23	20	19
55-64	13	15	11	12	10	10
65 and over	14	17	11	9	9	13
Median age	44.1	45.2	42.9	42.7	41.6	43.1

Table 5.–Selected Practice Characteristics, by Age of Dentist

Practice characteristics	Percent of dentists in age group			
	Under 35	35-44	45-54	55 and over
Dental practitioners	100	100	100	100
With one or more auxiliaries	71	81	80	53
With dental assistants	68	79	78	48
With dental hygienists	11	22	18	5
Dentists reporting time in private practice	100	100	100	100
48 weeks or more:				
40 hours or more per week	59	53	41	28
Less than 40 hours per week	20	23	30	34
Less than 48 weeks:				
40 hours or more per week	16	14	16	9
Less than 40 hours per week	5	10	13	29

Table 6.—Professional Characteristics

Professional characteristics	Number of dentists	Percent of dentists
Professional activity		
Total reporting activity[1]	956	100
Patient care	917	96
Teaching	87	9
Research	58	6
Other activity	56	6
Professional employment		
Professionally active dentists reporting type of employment[2]	1,015	100
Self-employed	944	93
Employed by another dentist	13	1
On staff of dental school	33	3
Employed by state or local government	10	1
Other dental employment	15	2
Limited practices		
Total reporting type of practice[3]	830	100
With limited practices	81	10
In orthodontics	29	3
In oral surgery	21	3
In pedodontics	16	2
In other specialty areas	15	2

Professional characteristics	Number of dentists	Percent of dentists
Time spent in private practice		
Total reporting time spent[4]	760	100
48 weeks or more:		
40 hours or more per week	358	47
Less than 40 hours per week	193	25
Less than 48 weeks:		
40 hours or more per week	106	14
Less than 40 hours per week	103	14
Auxiliary utilization		
Total reporting utilization[5]	982	100
With one or more auxiliaries	713	73
With dental assistant	682	69
With dental hygienist	147	15
With dental laboratory technician	72	7
With secretary or receptionist	187	19
With other type of personnel	17	2

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[1] Dentists active during the year preceding the survey who indicated the type of professional activity in which they engaged. Some dentists reported more than one type activity.

[2] Professionally active respondents who reported their type of employment at the time of the survey.

[3] Dentists who indicated whether or not they limited their practices to a dental specialty.

[4] Dentists primarily self-employed, both at the time of the survey and during the preceding year, who reported both hours and weeks spent during the year as a self-employed dentist.

[5] Dentists practicing at the chair at the time of the survey who indicated whether or not they utilized auxiliaries.

September 1967.

DENTISTS LICENSED IN PENNSYLVANIA

During the 1966 registration period, 7,934 dentists registered with the Pennsylvania Dental Council and Examining Board. A total of 7,754 dentists responded to the survey, 98 percent of all those registered. Eighty percent of the responding dentists are civilians located in Pennsylvania, 15 percent are civilians located in other states, and 5 percent are on duty with the Armed Forces. There were 116 women dentists included among the respondents, 94 of them located within the State.

Location and Military Status of Dentists
Licensed in Pennsylvania

Location and military status	All dentists	Percent of dentists
Total	7,934	100
Respondents	7,754	98
Nonrespondents	180	2
Respondents	7,754	100
Civilians in Pennsylvania	6,162	80
Civilians located in other states	1,149	15
On active duty with Armed Forces	422	5
Not reported	21	*

* Less than one-half of one percent.

Multiple licensure is not too common among Pennsylvania dentists. Only a little over one-fourth of all respondents hold a license to practice dentistry in one or more other states. Only 13 percent of the dentists located in Pennsylvania hold more than one license, with 11 percent licensed in one other state and a mere 2 percent licensed in two or more other states. Multiple licensure is much more common among dentists registering in Pennsylvania but located out-of-state; 20 percent hold two or more licenses in addition to their Pennsylvania license.

Two-thirds of the licenses held outside of Pennsylvania are held in adjacent states, including 33 percent in New Jersey, 21 percent in New York and some 5 percent each in Ohio and Maryland. More distant states frequently reported were Florida and California.

PROFESSIONAL TRAINING

Over 90 percent of Pennsylvania's 6,162 dentists are graduates of three in-state dental schools. The University of Pittsburgh and Temple University have together provided almost three-fourths of the State's dentists, each contributing more than one-third of the total supply. The University of Pennsylvania, with a considerably smaller contribution, has trained approximately one-fifth of the dentists.

The remaining 8 percent of Pennsylvania's dentists were trained in 42 out-of-state schools. Among these schools, the University of Maryland, the largest contributor, has supplied only about 100 dentists, or two percent of the dental force. The only other schools to provide as much as one percent of Pennsylvania's dentist supply are two schools in the District of Columbia, Georgetown and Howard Universities.

Dental School Attended and Year of Graduation
for Dentists in Pennsylvania

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	6,162 [1/]	-	1,230	1,874	3,051
		(Percent distribution by school)			
Schools in this State	5,698	92	92	93	93
Pittsburgh	2,372	38	42	35	40
Temple	2,149	35	32	39	33
Pennsylvania	1,177	19	18	19	20
42 schools located elsewhere	464	8	8	7	7

1/ Year of graduation not available for 7 dentists.

Only one-fifth of the State's dentists graduated from dental school within the last 10 years. In contrast, a full 50 percent received their dental degrees during the years prior to World War II. There has been virtually no change over the years in the overall proportion of dentists graduating either from Pennsylvania's own dental schools or from out-of-state schools.

In Pennsylvania approximately one-fifth of the survey respondents, or 1,270 dentists, reported that they had completed one year or more of advanced training after receiving their dental degrees. Of the 864 dentists with advanced clinical training, 267 completed a residency and 597 an internship. Among the 659 dentists who reported advanced academic training, 240 earned a master's or other advanced degree and another 419 received no additional degrees but completed one or more years of postgraduate study. A total of 253 dentists completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

More than four-fifths of the 6,162 responding dentists in Pennsylvania are located in the State's 13 metropolitan areas. The Pennsylvania portion of the Philadelphia area alone has almost 2,300 dentists, 37 percent of all the dentists in the State. Furthermore, one of every five dentists in the State (1,259) is actually located within Philadelphia County. Two of the remaining four counties in the Philadelphia area, Montgomery and Delaware, have 350 to 400 dentists, while Bucks and Chester Counties have 100 to 150 dentists. The 4-county Pittsburgh metropolitan area has 22 percent of the dental force, or 1,355 dentists. Three-fourths of these dentists (1,023) are in Allegheny County, where Pittsburgh is located.

Distribution of Pennsylvania Dentists

Area*	Number of counties	Number of dentists	Percent of dentists
Total	67	6,162	100
All metropolitan areas	25	5,147	84
Philadelphia area (Pa. part)	5	2,274	37
Pittsburgh area	4	1,355	22
11 other areas	16	1,518	25
Nonmetropolitan counties	42	1,015	16
Central city 10,000-49,999	19	736	12
Central city under 10,000	23	279	4

* See Appendix Table for complete listing and definition of metropolitan areas, including explanation of interstate areas, and presentation of individual county data.

Of the other metropolitan areas, Allentown-Bethlehem-Easton has the largest dental force, although it accounts for only 4 percent of the State supply. The next largest dental forces are found in the Wilkes-Barre - Hazleton, Harrisburg and Reading areas, each of which accounts for 3 percent of the State's dentists. Five of the remaining metropolitan areas--Lancaster, Scranton, York, Erie and Johnstown--each have approximately 2 percent of Pennsylvania's dentists.

Only 16 percent of the State's dentists are located in the 42 nonmetropolitan counties. Three-fourths of these dentists are located in the 19 counties with central cities of 10,000 or more persons. The 23 counties which do not have a city this large account for only 4 percent of the dentists in the State.

AGE DISTRIBUTION OF DENTISTS BY AREA

With slightly more than one-half of the dentists 50 years of age or older, the median age of dentists in Pennsylvania is 50.3 years. Only 15 percent of the State's dentists are under 35, but more than two and a half times this proportion, 41 percent, are 55 years of age or older. Nearly 1,000 dentists are 65 years old or over, including more than 400 who have reached the age of 70.

Age Distribution of Pennsylvania Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	6,162 [1]	100	-
Under 30	316	5	5
30 - 34	634	10	15
35 - 39	688	11	26
40 - 44	783	13	39
45 - 49	613	10	49
50 - 54	585	10	59
55 - 59	732	12	71
60 - 64	817	13	84
65 - 69	543	9	93
70 - 74	294	5	98
75 & over	144	2	100

1/ Includes 13 dentists who did not report age.

In metropolitan areas the median age of dentists is 49.9 years, more than two years younger than the 52.3 year median for dentists in the nonmetropolitan counties. Median ages vary considerably among the metropolitan areas. The areas of Allentown-Bethlehem-Easton and Lancaster have the youngest dentists, with median ages under 46 years. The oldest dentists are found in the Altoona, Scranton and Wilkes-Barre - Hazleton areas, where the median ages are 54 years or more. In the Pittsburgh area, the median age is 51.4 years, approximately one year older than the State average, while dentists in the Philadelphia area have a median age about equal to the State average, 49.8 years.

Age differences among the counties in the Philadelphia area are quite pronounced, with older dentists concentrated in the hub of the area. The median age of dentists in Philadelphia County itself is 53.0 years. By contrast, dentists in the four other counties comprising the Pennsylvania part of the Philadelphia area are considerably younger, with a median age of 45.0 years.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 6,162 responding dentists in Pennsylvania, 5,936, or 96 percent, are active in their profession, giving Pennsylvania one professionally active dentist for every 1,967 persons. The 13 metropolitan areas together have 1,869 persons per active dentist, while the 42 nonmetropolitan counties have a somewhat higher ratio of 2,467 persons per dentist. Of the principal metropolitan areas, Philadelphia has the more favorable ratio of 1,734 persons per dentist compared to a ratio of 1,907 in the Pittsburgh area.

Number of Persons per Active Dentist in Pennsylvania

Area*	Professionally active dentists	Population	Persons per dentist
Total	5,936	11,676,800	1,967
All metropolitan areas	4,959	9,266,500	1,869
Philadelphia area (Pa. part)	2,201	3,816,000	1,734
Pittsburgh area	1,284	2,448,100	1,907
11 other areas	1,474	3,002,400	2,037
Nonmetropolitan counties	977	2,410,300	2,467
Central city 10,000-49,999	707	1,718,700	2,431
Central city under 10,000	270	691,600	2,561

* See Appendix Table for data pertaining to individual metropolitan areas and counties.

In the 5-county Philadelphia metropolitan area, the persons-per-dentist ratios range from 1,519 in Montgomery County to 2,460 in Bucks County. Philadelphia County itself has one dentist for every 1,689 persons. In the Pittsburgh metropolitan area, Allegheny County, the hub of the area, has the most favorable ratio--1,717, while the three other counties in the area all have similar ratios which average about 2,500 persons per dentist.

Among the other metropolitan areas, four have ratios more favorable than the State average--Scranton, Wilkes-Barre - Hazleton, Allentown-Bethlehem-Easton and Reading. Three metropolitan areas--Harrisburg, Erie and Lancaster--have ratios between 2,100 and 2,300, and three other areas--Altoona, York and Johnstown--have ratios between 2,300 and 2,500. The remaining area, Susquehanna County, an outlying county in the Binghamton, New York metropolitan area, has a persons-per-dentist ratio exceeding 3,000.

Of the 42 nonmetropolitan counties of the State, only five have persons-per-dentist ratios under 2,000. There are 20 counties with ratios of more than 2,500, including 9 counties with ratios in excess of 3,000 persons per dentist.

UTILIZATION OF AUXILIARIES

Almost three-fifths of the dental practitioners in Pennsylvania (i.e., dentists who spend any time working at the chair) employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 46 percent of the dentists, including 39 percent who employ at least one on a full-time basis. Secretaries or receptionists are employed by 17 percent of the practitioners, with about two-thirds of these dentists utilizing such personnel full time. Only 10 percent of the dentists employ dental hygienists and 5 percent employ dental technicians. Hygienists and laboratory technicians are more likely to be employed on a part-time basis than are other auxiliary personnel.

Pennsylvania Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	5,810 1/	100	48	8
One or more auxiliaries	3,152	56	48	8
Assistant	2,596	46	39	7
Hygienist	562	10	5	5
Laboratory technician	257	5	2	3
Secretary or receptionist	953	17	12	5
Other type of personnel	204	4	2	2
No auxiliaries	2,446	44	-	-

1/ Includes 212 dentists who did not report on auxiliary utilization.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Approximately 73 percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 51 percent among dentists 45 to 64 years old and to 31 percent among dentists 65 and over.

Dentists in metropolitan areas employ auxiliaries with about the same frequency as those located in nonmetropolitan counties. Even though the proportion of dentists utilizing auxiliaries in the Philadelphia area approximates the State average, differences among individual counties within the area are rather pronounced. In Philadelphia County only 43 percent of the dentists employ auxiliaries, compared to 66 percent in the four other counties comprising the Pennsylvania part of the Philadelphia metropolitan area.

OTHER SURVEY FINDINGS

☐ Ninety-five percent of the professionally active dentists in Pennsylvania are primarily engaged in private practice. Two percent are on the staffs of dental schools. The remaining three percent are either employed by government agencies or are engaged in other dental activities, such as taking advanced training.

☐ At least one part-time dental activity in addition to their principal employment was reported by 18 percent of the Pennsylvania dentists. Part-time teaching in a dental school was the most frequently reported type of secondary employment, followed by employment in a State or local government agency. A variety of other secondary dental activities were reported, including employment by another dentist and serving in voluntary agencies.

☐ About 10 percent of the practitioners reported they limit their practice to a dental specialty, primarily to oral surgery and orthodontics. Some 12 percent of the dental practitioners in both the Philadelphia and Pittsburgh areas limit their practices, compared to 10 percent of those in other metropolitan areas and only 6 percent of those located in nonmetropolitan counties.

☐ Dentists providing patient care during the year prior to the survey devoted an average of 40.0 hours a week to this activity for 47.6 weeks. About one dentist in six worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ Of the 1,149 dentists licensed in Pennsylvania but located in another state at the time of the survey, one-third were in New Jersey and 26 percent were located in the other adjacent states of New York, Maryland, Ohio, West Virginia and Delaware. The remaining out-of-state dentists were located in 37 other states, predominantly Florida and California.

February 1968.

APPENDIX TABLE

Selected Data on Dentists in Pennsylvania, by Location

County group and county	Civilian dentists			Professionally active	Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965				
		Percent under 40	Percent 55 or more			
All counties	6,162	27	41	5,936	11,676.8	1,967
Metropolitan areas 2/	5,147	27	40	4,959	9,266.5	1,869
Philadelphia area (Pa. part)	2,274	26	39	2,201	3,816.0	1,734
Bucks	146	43	17	146	359.1	2,460
Chester	124	36	27	121	235.0	1,942
Delaware	354	26	30	343	600.1	1,750
Montgomery	391	34	26	383	581.8	1,519
Philadelphia	1,259	20	47	1,208	2,040.0	1,689
Pittsburgh area	1,355	29	46	1,284	2,448.1	1,907
Allegheny	1,023	29	46	969	1,663.5	1,717
Beaver	98	29	49	95	212.9	2,241
Washington	81	35	41	78	211.7	2,714
Westmoreland	153	26	52	142	360.0	2,535
Allentown-Bethlehem-Easton area (Pa. part)	252	32	29	246	451.4	1,835
Lehigh	143	36	24	139	241.5	1,737
Northampton	109	26	36	107	209.9	1,962
Wilkes-Barre - Hazleton area	193	22	48	189	324.8	1,719
Luzerne	193	22	48	189	324.8	1,719
Harrisburg area	192	27	37	185	395.1	2,136
Cumberland	59	31	36	56	139.2	2,486
Dauphin	125	27	38	122	228.5	1,873
Perry	8	-	38	7	27.4	3,914

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Pennsylvania, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Percent under 40	Percent 55 or more			
Metropolitan areas 2/ (cont'd.)						
Reading area	152	28	38	150	284.1	1,894
Berks	152	28	38	150	284.1	1,894
Lancaster area	138	28	30	134	299.7	2,237
Lancaster	138	28	30	134	299.7	2,237
Scranton area	138	21	51	134	224.0	1,672
Lackawanna	138	21	51	134	224.0	1,672
Erie area	128	27	41	125	266.5	2,132
Erie	128	27	41	125	266.5	2,132
York area	136	29	32	131	310.5	2,370
Adams	17	41	35	15	55.8	3,720
York	119	28	31	116	254.7	2,196
Johnstown area	118	22	47	112	276.0	2,464
Cambria	95	20	51	90	200.7	2,230
Somerset	23	26	30	22	75.3	3,423
Altoona area	61	25	56	58	136.7	2,357
Blair	61	25	56	58	136.7	2,357
Binghamton, N Y. area (Pa. part)	10	20	40	10	33.6	3,360
Susquehanna	10	20	40	10	33.6	3,360

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Pennsylvania, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Professionally active		
		Percent under 40	Percent 55 or more			
Nonmetropolitan counties 3/	1,015	26	45	977	2,410.3	2,467
Central city 25,000-49,999	216	27	40	211	458.5	2,173
Lawrence	51	29	45	48	117.3	2,444
Lebanon	43	33	35	43	94.2	2,191
Lycoming	51	22	37	51	113.6	2,227
Mercer	71	27	41	69	133.4	1,933
Central city 10,000-24,999	520	24	47	496	1,260.2	2,541
Butler	50	18	58	47	123.6	2,630
Centre	39	23	44	39	88.1	2,259
Clearfield	25	24	48	25	79.4	3,176
Clinton	9	33	44	9	38.0	4,222
Columbia	27	30	37	25	53.3	2,132
Crawford	37	22	46	35	77.5	2,214
Fayette	57	12	56	57	160.3	2,812
Franklin	36	28	31	34	95.5	2,809
Indiana	35	37	46	34	74.6	2,194
McKean	26	23	39	25	53.5	2,140
Mifflin	21	29	33	20	44.7	2,235
Northumberland	36	19	47	34	98.4	2,894
Schuylkill	72	22	58	65	160.9	2,475
Venango	33	33	42	30	65.4	2,180
Warren	17	29	41	17	47.0	2,765

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Pennsylvania, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Percent under 40	Percent 55 or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city 5,000-9,999	187	27	42	182	459.1	2,523
Armstrong	25	24	56	24	79.0	3,292
Bradford	21	33	43	21	56.4	2,686
Carbon	23	30	30	23	50.7	2,204
Elk	15	-	53	13	38.7	2,977
Greene	11	27	46	11	36.6	3,327
Huntingdon	19	21	37	18	38.7	2,150
Jefferson	20	45	30	20	45.5	2,275
Monroe	17	35	35	17	41.9	2,465
Montour	10	20	50	9	17.1	1,900
Union	10	20	40	10	26.6	2,660
Wayne	16	25	44	16	27.9	1,744
Central city 2,500-4,999	68	32	53	64	168.9	2,639
Bedford	19	32	42	17	43.1	2,535
Cameron	4	-	100	4	7.9	1,975
Clarion	17	29	65	17	37.0	2,176
Potter	6	33	67	5	16.4	3,280
Snyder	11	36	36	10	27.4	2,740
Tioga	11	46	46	11	37.1	3,373

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Pennsylvania, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Percent under 40	Percent 55 or more			
Nonmetropolitan counties 3/ (cont'd.)						
Central city under 2,500	24	29	33	24	63.6	2,650
Forest	1	-	100	1	4.3	4,300
Fulton	4	25	-	4	10.7	2,675
Juniata	3	-	67	3	16.2	5,400
Pike	4	25	25	4	9.5	2,375
Sullivan	1	-	-	1	6.0	6,000
Wyoming	11	46	36	11	16.9	1,536

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2/ Pennsylvania counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists reporting their location in the Pennsylvania portion of the Philadelphia SMSA, Allentown-Bethlehem-Easton SMSA, and Binghamton SMSA.

3/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN RHODE ISLAND

During the 1965 registration period, a total of 537 dentists registered with the Rhode Island Department of Health, Board of Examiners in Dentistry (Table 1). A large proportion of these dentists, 86 percent, are civilians located in Rhode Island; another 10 percent are civilians located in other States, and only 3 percent are on active duty in the Armed Forces. Almost two-thirds of the 53 out-of-State civilian dentists are located in adjacent States, 30 in Massachusetts and 4 in Connecticut.

Table 1.--Location and Military Status of Dentists Licensed in Rhode Island

Location and military status	All dentists	Percent of dentists
Total licensed	537	100
Respondents	497	93
Nonrespondents	40	7
Total licensed	537	100
Civilians in Rhode Island	463	86
Respondents	429	-
Nonrespondents	34	-
Civilians in another State	53	10
On active duty with Armed Forces	17	3
Not available	4	1

The survey questionnaire was completed by 497 dentists, 93 percent of all those registered. Certain items of information--State and county location, age, dental school attended, and year of graduation--were obtained for nonrespondents from records maintained either by the Rhode Island Department of Health, Board of Examiners in Dentistry, or from the 1966 American Dental Directory published by the American Dental Association. This report includes information on both respondents and nonrespondents unless otherwise indicated. (See Appendix Table A.)

Of all dentists responding to the survey, almost two in every five hold a license in one or more States in addition to Rhode Island. About one-fourth of the dentists located in Rhode Island are licensed in one other State, but only 5 percent are licensed in two or more other States. By comparison, out-of-State respondents tend to have a considerably larger number of licenses, with 32 percent holding two or more licenses in addition to the one held in Rhode Island.

Civilian Dentists in Rhode Island

Age.--The median age of dentists in Rhode Island is a rather high 48.1 years. Three in every 10 of the State's dentists are 45 to 54 years of age and another 30 percent are 55 years old or over, including 11 percent who are at least 65 years of age. In contrast, only 12 percent of the dentists are under age 35 (Table 2).

Table 2.--Age Distribution

Age	Number of dentists	Percent of dentists
Total	463[1]	100
Under 35	53	12
35 - 44	122	28
45 - 54	133	30
55 - 64	85	19
65 - 74	31	7
75 & over	18	4

[1] Includes 21 dentists for whom age is not available.

A relatively large proportion of survey nonrespondents are in the older age groups. Almost 40 percent of the nonresponding dentists are 65 years of age or older, but only 9 percent of the respondents are in this age group. Moreover, the median age of dentists not responding to the survey is 59.4 years, almost 12 years higher than for respondents.

Dental schools.--As would be expected because of their high median age, relatively few of Rhode Island's dentists are recent dental school graduates. Only 16 percent of the State's dental force graduated from dental school within the past 10 years, which contrasts sharply with the 41 percent of the dental force graduating prior to World War II.

More than four of every five dentists currently located in Rhode Island are graduates of eight dental schools located in three States--Massachusetts, Pennsylvania, Maryland--and the District of Columbia. The two dental schools located in Massachusetts have trained about 43 percent of the State's total dentist supply (Table 3). Tufts University has made the largest contribution, accounting for about one-third of the total dental force, while Harvard University, with a considerably smaller contribution, has trained slightly more than one-tenth of the dentists. Other schools making important contributions are the University of Maryland and Georgetown University, which have supplied Rhode Island with 17 percent and 11 percent of its dentists, respectively. The only other schools in these States to contribute as many as 20 dentists to the Rhode Island dentist supply are the University of Pennsylvania and Temple University.

Table 3.--Dental School Attended

Dental school attended	Number of dentists	Percent of dentists
Total number	463	100
Tufts	148	32
Maryland	77	17
Harvard	50	11
Georgetown	49	11
Temple	30	6
St. Louis	28	6
Pennsylvania	24	5
Other schools	57	12

The remaining 17 percent of the State's dentists were trained in 20 other dental schools, including 3 in Canada. Among these schools, St. Louis University has contributed the largest number of graduates, about 6 percent of the total supply.

Advanced training.--About 28 percent of the respondents, or 121 dentists, reported they had completed one year or more of advanced training beyond the dental degree (Table 4). Of the 94 dentists with advanced clinical training, 19 had completed a residency and 75 an internship. Among the 46 dentists who reported advanced academic training, 16 had earned a master's or other advanced degree, and another 30 received no additional degrees but had completed one or more years of postgraduate study.

Table 4.--Advanced Training

Type of advanced training	Number of dentists	Percent of dentists
Total	429[1]	100
With advanced training	121	28
Clinical training only	75	18
Academic training only	27	6
Both clinical and academic training	19	4
With no advanced training	308	72

[1] Includes survey respondents only.

Distribution of dentists.--For the presentation of data on the geographical distribution of dentists, Rhode Island has been divided into two areas as defined in "Economic Areas of the United States," by Donald J. Bogue and Calvin L. Beale. The Providence area includes the three counties of Providence, Kent and Bristol, and the Lower Narragansett Bay area consists of Washington and Newport Counties.

About 9 in every 10 of the 463 dentists in Rhode Island are concentrated in the Providence area (Table 5). Providence County alone is the location of three-fourths of the State's dentists. Another 11 percent are located in Kent County, while only 3 percent are located in Bristol County. The remainder of the State's dentists are located in the Narragansett Bay area, 7 percent in Newport County and 5 percent in Washington County.

Table 5.--Distribution by Area and County

Area and county	Number of dentists	Percent of dentists
All counties	463	100
Providence area	408	88
Providence	342	74
Kent	52	11
Bristol	14	3
Lower Narragansett Bay area	55	12
Newport	33	7
Washington	22	5

There is only a slight difference in the average age of dentists in the two geographic areas. The median age of dentists in the Lower Narragansett Bay area is 48.8 years, while dentists in the Providence area are on the average about one year younger, with a median age of 47.9 years. Although the median ages of dentists in the two counties which comprise the Lower Narragansett Bay area are virtually the same, there is a notable age difference among dentists in the counties making up the Providence area. In Providence County the median age of dentists is 49.1 years, with only 10 percent of the dentists under age 35 and 33 percent 55 years old or over. This county, containing the city of Providence, represents the location of long-established dentists who tend to be concentrated in the hub of large metropolitan areas. By contrast, the median age of dentists in the counties of Kent and Bristol, combined, is 42.9 years, with 20 percent of the dentists under 35 years of age and only 17 percent 55 or older.

Active dentists in relation to population.--During the 1965 registration period approximately 450 dentists in Rhode Island were active in their profession. These dentists represented 97 percent of all those in the State. The remaining 3 percent include responding dentists who reported themselves fully retired and nonresponding dentists who are known to be 70 years of age or older. Based on these data, Rhode Island had one professionally active dentist for every 2,007 persons in 1965 (Table 6).

Table 6.--Number of Persons Per Active Dentist

Area and county	Professionally active dentists	Population[1]	Persons per dentist
All counties	451	905.2	2,007
Providence area	399	749.0	1,877
Providence	334	580.5	1,738
Kent	51	127.3	2,496
Bristol	14	41.2	2,943
Lower Narragansett Bay area	52	156.2	3,004
Newport	30	91.7	3,057
Washington	22	64.5	2,932

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The number of persons per active dentist in the Providence area is about 1,880 compared to a less favorable ratio of 3,000 in the Lower Narragansett Bay area. Within the Providence area, Providence County has the most favorable ratio of 1,740 persons per dentist, Kent County ranks second with a ratio of 2,500 and Bristol County has 2,940 persons per dentist, the highest ratio in the 3-county area. In the Lower Narragansett Bay area, Washington and Newport Counties have similar persons-per-dentist ratios, 2,930 and 3,060, respectively.

Professional activity.--Of the 424 responding dentists who reported that they were professionally active at the time of the survey, 97 percent were primarily engaged in private practice, with 96 percent self-employed and one percent employed by another dentist. Of the remaining dentists, 2 percent were employed by a government agency and one percent were engaged in other dental activities, such as taking advanced training.

About one out of every five dentists reported that they were employed in a part-time dental activity in addition to their primary professional employment. These dentists reported a variety of secondary dental activities, including employment in a government agency, teaching, and working for a voluntary agency.

Almost all dentists who reported on their professional activity in Rhode Island last year indicated they had provided care for patients, devoting an average of 40.4 hours per week to this activity for 48.5 weeks during the year. Only 8 percent of the dentists worked less than 40 hours per week for less than 48 weeks. On the other hand, a substantial number of dentists worked exceptionally long hours. One dentist in every five spent the equivalent of a 6-day week (48 hours or more) in patient care for at least 48 weeks during the year.

Practice characteristics.--Thirty-nine practicing dentists, or about 10 percent, reported that they limit their practice to a dental specialty. Almost all of the limited practitioners are concentrated in the Providence area including 33 in Providence County and 3 in Kent County. Orthodontics and oral surgery are the two most frequently reported specialty areas, accounting for about two-thirds of the dentists who limit their practices. The next most frequently reported areas of limited practice are periodontics and prosthodontics.

About 68 percent of the dental practitioners in Rhode Island (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel. The dental assistant, the most frequently utilized auxiliary, is employed by about 60 percent of the dentists. Dental hygienists and secretaries are utilized with considerably less frequency, each of these auxiliaries being employed by about one-sixth of the dentists. Only one practitioner in 12 employs a laboratory technician in his practice.

Employment of auxiliaries varies with the age of the dentist, becoming less frequent among dentists in the older age groups. Auxiliaries are employed by one-half of the dental practitioners in the age group 55 through 64, compared to more than three-fourths of the practitioners under age 55. An even lower proportion, only one-third, of the practitioners 65 years old or over employ auxiliaries.

August 1967.

Appendix Table A.--Summary Statistics for Rhode Island

	Total dentists	Responding dentists	Non-responding dentists
Total dentists licensed in Rhode Island	537[1]	497[1]	40[2]
Civilian dentists in Rhode Island[3] (designated simply as "dentists" in text tables)	463	429	34
Professionally active dentists[4]	451	424	27
Dental practitioners[5]	-	420	-
In limited practice[6]	-	39	-
Located in Rhode Island last year:			
Reported professional activity[7]	-	411	-
Dentists providing patient care[8]	-	403	-
Reported time spent in patient care[9]	-	300	-
Civilian dentists in another State	53	47	6
Dentists on active duty in Armed Forces	17	17	-

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[1] Includes 4 dentists not reporting current location or military status.

[2] Data for nonresponding dentists were obtained from the Rhode Island Department of Health, Board of Examiners in Dentistry, and from the 1966 American Dental Directory published by the American Dental Association.

[3] All dentists who currently work in Rhode Island (excluding those in the Armed Forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 16, age - 21.

[4] Includes all responding dentists who reported they were professionally active in Rhode Island at the time of the survey and all nonrespondents known to be under 70 years of age.

[5] All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

[6] Dentists who reported they limited their practice to a dental specialty.

[7] Dentists located in Rhode Island last year who indicated type(s) of activity in which they engaged.

[8] All responding dentists who engaged in patient care last year, either as a primary or a secondary activity.

[9] Dentists reporting both hours and weeks spent in patient care last year.

DENTISTS LICENSED IN SOUTH CAROLINA

During the 1965 registration period, 963 dentists registered with the South Carolina State Board of Dental Examiners. Of these dentists, 57 percent were located in the State, 37 percent were located in other States, and 6 percent were on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in South Carolina

Location and military status	All dentists	Percent of dentists
Total licensed	963	100
Respondents	697	72
Nonrespondents	266	28
Total licensed	963	100
Civilians in South Carolina	551	57
Respondents	462	-
Nonrespondents	89	-
Civilians in another State	357	37
On active duty with Armed Forces	55	6

The survey questionnaire was completed by 697 dentists, 72 percent of the total registered. However, the response rate of dentists actually located in South Carolina is considerably higher, 84 percent. Information provided by the survey respondents has been supplemented, when possible, by data on location, age, dental school attended, and year of graduation for dentists not responding to the survey. This information was obtained from records maintained by the South Carolina State Board of Dental Examiners or from the 1966 American Dental Directory, published by the American Dental Association.

Multiple licensure is fairly common among dentists registered in South Carolina; 68 percent of the respondents hold a license to practice dentistry in one or more other States. About 48 percent of the dentists located in the State have one other license, but only 8 percent have two or more other licenses. The proportion of out-of-State dentists holding multiple licenses is considerably greater; more than two-fifths have two or more licenses in addition to the one held in South Carolina.

DENTAL SCHOOL ATTENDED

Nine in every ten of the 551 dentists located in South Carolina are graduates of 15 dental schools located in the South. Emory University, the largest contributor, has graduated 38 percent of the State's dentists, and the Medical College of Virginia has supplied 17 percent. The Universities of Louisville and Maryland have each provided the State with 8 percent of its dental force, while the University of Tennessee and Meharry Medical College have trained 6 percent and 5 percent, respectively. Nine other schools in the South have supplied about 9 percent of South Carolina's dentists, including 4 percent who graduated from the University of North Carolina. The remaining dentists (9 percent) are graduates of 19 dental schools located in other parts of the Nation.

Dental School Attended and Year of Graduation for Dentists in South Carolina

Dental school attended	Number of dentists	Year of graduation: All years	After 1955	1941-1955	1940 or earlier
Total number	551[1/]	-	217	202	123
		(Percent distribution by school)			
Schools in the South	503	91	94	91	86
Emory University	207	38	17	46	61
Medical College of Virginia	97	17	30	15	1
University of Louisville	43	8	11	9	-
University of Maryland	42	8	8	9	6
University of Tennessee	36	6	10	5	2
Meharry Medical College	26	5	2	2	13
9 other schools	52	9	16	5	3
19 schools in other regions	48	9	6	9	14

1/ Year of graduation not available for 9 dentists. Percents are based on total for whom data are known.

The proportionate contribution of dental schools in the South to the State's dentist supply has remained relatively constant through the years. However, the role of Emory University as the major supplier of dentists to South Carolina has declined substantially since 1955. Prior to that time more than one-half (52 percent) of all dentists in the State were graduates of Emory; in contrast, less than one-fifth of the State's dentists graduating since 1955 came from this school. The contribution of the Medical College of Virginia to the State's total supply has increased from 9 percent of all dentists in South Carolina who graduated in 1955 or earlier to 30 percent of all those graduating since that time.

DISTRIBUTION OF DENTISTS

Dentists in South Carolina are unevenly distributed geographically, with slightly more than three-fifths located in only seven of the State's 46 counties. Three of these counties--Richland, Greenville, and Charleston--are located in metropolitan areas and have 65 or more dentists each. The remaining four counties--Spartanburg, Florence, Anderson, and York--are nonmetropolitan, but each has a central city of 10,000 or more inhabitants, and has between 20 and 45 dentists.

Forty-seven percent of the 551 dentists in South Carolina are located in the four metropolitan areas of the State. The Columbia area has 96 dentists, 18 percent of the total supply. The Greenville area,with 83 dentists, has 15 percent; and the Charleston area,with 66 dentists, has 12 percent. The South Carolina portion of the interstate Augusta area contains only 2 percent of the State's dentist supply.

Distribution of South Carolina Dentists,
by County Group

County group	Number of counties	Number of dentists	Percent of dentists
All counties	46	551	100
Metropolitan areas	7	257	47
Columbia area	2	96	18
Greenville area	2	83	15
Charleston area	2	66	12
Augusta area (S.C. part)	1	12	2
Nonmetropolitan counties	39	294	53
Central city 25,000-49,999	3	89	16
Central city 10,000-24,999	7	89	16
Central city 5,000-9,999	15	81	15
Central city under 5,000	14	35	6

The 39 nonmetropolitan counties have more than one-half of the State's total dental force. The 10 counties which have 10,000 or more persons in their central cities have 178 dentists, almost one-third of the total supply. Fifteen percent are located in the 15 counties having between 5,000 and 9,999 inhabitants in their central cities, and the remaining 6 percent are located in the 14 counties with central city populations under 5,000.

AGE OF DENTISTS

South Carolina's dentists are relatively young as a group, with a median age of 41.5 years. Thirty-one percent of the dentists are under 35 years of age, and an almost equal proportion are between 35 and 44. Slightly more than one-fourth of the State's total dental force is between 45 and 64 years of age, while only one-tenth (54 dentists) are 65 years of age or older. Of these, 6 percent, or 34 dentists, are at least 70 years of age.

Age Distribution

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	551	100	-
Under 30	77	14	14
30 - 34	95	17	31
35 - 39	71	13	44
40 - 44	106	19	63
45 - 49	66	12	75
50 - 54	31	6	81
55 - 59	21	4	85
60 - 64	29	5	90
65 - 69	20	4	94
70 - 74	19	3	97
75 & over	15	3	100

The age distribution of dentists by area is similar throughout the State. The median age and proportion of dentists in each age group are essentially the same in the metropolitan areas as in the nonmetropolitan counties.

ACTIVE DENTISTS IN RELATION TO POPULATION

With 537 of the 551 dentists in South Carolina active in their profession, the State has only one professionally active dentist for every 4,748 persons. In the metropolitan areas, which have 38 percent of the State's population and 47 percent of its dentists, the ratio is a high 3,887. The remainder of the State, with 53 percent of the dentists and 62 percent of the population, has an even higher ratio of 5,498 persons per dentist.

Number of Persons Per Active Dentist
in South Carolina

County group	Professionally active dentists	Population	Persons per dentist
All counties	537	2,549,800	4,748
Metropolitan areas	250	971,800	3,887
Columbia area	93	296,500	3,188
Greenville area	82	277,600	3,385
Charleston area	63	303,000	4,810
Augusta area (S.C. part)	12	94,700	7,892
Nonmetropolitan counties	287	1,578,000	5,498
Central city 25,000-49,999	86	344,800	4,009
Central city 10,000-24,999	85	390,600	4,595
Central city 5,000-9,999	81	579,000	7,148
Central city under 5,000	35	263,600	7,531

Among metropolitan areas, the best ratios are found in the Columbia and Greenville areas, with 3,188 and 3,385, respectively. The Charleston area has 4,810 persons per dentist, and the South Carolina portion of the interstate Augusta area has 7,892. Within the Columbia metropolitan area, Richland County, with 2,782 persons per dentist, has the most favorable ratio in the State and is the only one of the 46 counties with fewer than 3,000 persons per dentist.

Of the 39 nonmetropolitan counties, only 11 have persons-per-dentist ratios under 5,000, while 24 counties have 6,000 or more persons per dentist, including 10 counties with ratios in excess of 10,000, and one county which has no dentist according to available information. When counties are grouped according to the population of their central cities, the persons-per-dentist ratios increase considerably as the population of the central city decreases. Counties with central city populations between 25,000 and 49,999 average some 4,000 persons per dentist, while counties with fewer than 5,000 persons in their central cities have an average of only one dentist for every 7,500 persons.

UTILIZATION OF AUXILIARIES

Almost nine-tenths of South Carolina's dental practitioners (i.e., dentists who spend any time working at the chair) reported the employment of one or more auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of the dentists, with practically all of them employing at least one assistant on a full-time basis. Secretaries or receptionists are employed by slightly more than one-third of the dentists, three-fourths of whom employ at least one full time. Dental hygienists are employed by 13 percent of the dentists, and laboratory technicians, by 7 percent. These auxiliaries are most often employed part-time.

Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	451[1]	100	86	3
One or more auxiliaries	396	89	86	3
Assistant	370	83	80	3
Hygienist	59	13	5	8
Laboratory technician	32	7	2	5
Secretary/receptionist	152	34	25	9
Other type personnel	29	7	4	3
No auxiliary	48	11	-	-

[1] Includes 7 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist, becoming less frequent among dentists in the older age groups. Ninety-four percent of the practitioners under 55 years of age employ some type of auxiliary. This proportion decreases to 70 percent for dentists 55 to 64 years of age, and to only 55 percent for dentists 65 and over.

Approximately one-fifth of the responding practitioners reported one or more vacant positions for dental auxiliaries. Of these dentists, 45 percent indicated a need for full-time hygienists, and 21 percent, for full-time assistants.

OTHER SURVEY FINDINGS

☐ About one in every six (78) dentists in South Carolina reported the completion of one year or more of advanced training after receiving their dental degree. Of 45 dentists with advanced clinical training, 13 had completed a residency, and 32, an internship. Among the 46 dentists who had completed advanced academic training, 24 had earned at least a master's degree, and another 22 had completed one or more years of study at the postgraduate level. There were 13 dentists who had completed both academic and clinical training.

☐ Ninety-six percent of the responding professionally active dentists are primarily engaged in private practice. Two percent are employed by governmental agencies, and another two percent are engaged in some other dental activity, such as taking advanced training. Only 8 percent of the dentists reported a secondary dental employment, such as service with a voluntary agency or employment by State or local government.

☐ Dentists reporting on time spent in patient care during the year preceding the survey devoted an average of 40.5 hours per week to this activity for 48.0 weeks. About one dentist in eight reported working the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

☐ About 10 percent of the dental practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics and oral surgery. Fourteen percent of the dentists in metropolitan areas have limited practices as compared to 6 percent in the remainder of the State.

☐ Approximately three-fifths of the 357 dentists who are licensed in South Carolina but located in another State are in the two adjacent States--33 percent in North Carolina and 25 percent in Georgia. Ten percent of the out-of-State dentists are in Florida, and 5 percent are in Virginia. The remainder are located in over 20 other States throughout the Nation.

June 1969.

APPENDIX TABLE

Selected Data on Dentists in South Carolina, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965: Under 35	Age in 1965: 55 yrs. or more	Professionally active		
All counties	551	462	89	172	104	537	2,549.8	4,748
Metropolitan areas[2]	257	221	36	82	44	250	971.8	3,887
Charleston area	66	59	7	17	14	63	303.0	4,810
Charleston	65	59	6	17	14	62	252.6	4,074
Berkeley	1	-	1	-	-	1	50.4	50,400
Columbia area	96	81	15	33	18	93	296.5	3,188
Lexington	11	10	1	6	1	11	68.4	6,218
Richland	85	71	14	27	17	82	228.1	2,782
Greenville area	83	75	8	25	10	82	277.6	3,385
Greenville	72	65	7	21	9	71	228.8	3,223
Pickens	11	10	1	4	1	11	48.8	4,436
Augusta area (S.C. part)	12	6	6	7	2	12	94.7	7,892
Aiken	12	6	6	7	2	12	94.7	7,892
Nonmetropolitan counties[3]	294	241	53	90	60	287	1,578.0	5,498
Central city 25,000-49,999	89	69	20	29	21	86	344.8	4,009
Anderson	24	18	6	10	5	24	101.7	4,238
Spartanburg	43	33	10	10	11	42	160.8	3,829
York	22	18	4	9	5	20	82.3	4,115

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in South Carolina, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respon- dents	Non- respon- dents	Age in 1965		Profes- sionally active		
				Under 35	55 yrs. or more			
Nonmetropolitan counties[3] (cont'd.)								
Central city 10,000-24,999	89	75	14	29	16	85	390.6	4,595
Cherokee	5	4	1	1	1	4	35.3	8,825
Florence	26	25	1	14	6	26	90.9	3,496
Georgetown	9	8	1	1	-	9	35.6	3,956
Greenwood	17	12	5	4	4	15	45.5	3,033
Orangeburg	15	14	1	5	2	15	68.5	4,567
Sumter	14	10	4	4	3	13	85.5	6,577
Union	3	2	1	-	-	3	29.3	9,767
Central city 5,000-9,999	81	66	15	21	18	81	579.0	7,148
Abbeville	2	1	1	-	1	2	20.9	10,450
Beaufort	4	4	-	2	-	4	53.0	13,250
Chester	4	2	2	-	3	4	30.0	7,500
Chesterfield	6	5	1	2	-	6	32.6	5,433
Colleton	4	4	-	1	1	4	27.5	6,875
Darlington	10	8	2	5	2	10	55.4	5,540
Dillon	5	4	1	2	2	5	30.4	6,080
Horry	10	8	2	3	1	10	77.7	7,770
Kershaw	8	4	4	2	3	8	34.1	4,263
Lancaster	4	3	1	-	1	4	41.9	10,475
Laurens	6	5	1	-	1	6	47.9	7,983
Marion	4	4	-	-	-	4	31.4	7,850
Marlboro	2	2	-	1	-	2	26.9	13,450
Newberry	5	5	-	1	-	5	28.6	5,720
Oconee	7	7	-	2	3	7	40.7	5,814

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in South Carolina, By Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965		Professionally active		
				Under 35	55 yrs. or more			
Nonmetropolitan counties[3/] (cont'd.)								
Central city 2,500-4,999	22	20	2	5	4	22	169.5	7,705
Allendale	1	1	-	-	-	1	11.2	11,200
Bamberg	4	4	-	2	-	4	15.6	3,900
Barnwell	4	4	-	-	1	4	17.7	4,425
Clarendon	3	2	1	1	1	3	28.4	9,467
Edgefield	1	-	1	-	-	1	15.3	15,300
Fairfield	2	2	-	1	1	2	20.1	10,050
Lee	2	2	-	1	-	2	21.2	10,600
Williamsburg	5	5	-	-	1	5	40.0	8,000
Central city under 2,500	13	11	2	6	1	13	94.1	7,238
Calhoun	1	1	-	1	-	1	11.1	11,100
Dorchester	5	4	1	2	-	5	30.2	6,040
Hampton	5	4	1	3	-	5	17.0	3,400
Jasper	-	-	-	-	-	-	13.8	-
McCormick	1	1	-	-	-	1	8.1	8,100
Saluda	1	1	-	-	1	1	13.9	13,900

[1/] Copyright 1965. Sales Management Survey of Buying Power.

[2/] South Carolina counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data. For the interstate Augusta SMSA, statistics are presented only for dentists located in the South Carolina portion of the area.

[3/] Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN SOUTH DAKOTA

A total of 426 dentists registered with the South Dakota Board of Dental Examiners in 1965 (Table 1). Of this total, 362 completed the questionnaire, for an overall response rate of 85 percent. About two-thirds of the responding dentists were civilians located in South Dakota at the time of the survey. Civilians located in other States accounted for 28 percent of the respondents and 4 percent were dentists on active duty in the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in South Dakota

Location and military status	All dentists	Percent of dentists
Total	426	100
Respondents	362	85
Nonrespondents	64	15
Respondents	362	100
Civilians in South Dakota	239	66
Civilians in another State	102	28
On active duty with Armed Forces	13	4
Not reported	8	2

Of the 102 civilian out-of-State dentists, more than one-half were located in States adjoining South Dakota. There were respondents from every adjoining State except Wyoming. The remaining 48 out-of-State respondents were located in 16 other States scattered across the Nation and in one foreign country. About one-fifth of the 102 dentists were formerly located in South Dakota, and all but a few have left the State since 1955.

Of all dentists responding, nearly three-fourths hold a license in one or more additional States (Table 2). As a result, the total number of State licenses held by the 362 respondents exceeds 700. Multiple licenses are held by almost two-thirds of South Dakota's dentists, including 53 percent who are licensed in one other State and 11 percent in 2 or more other States.

Table 2.--Percent of Dentists Holding Licenses in Other States

Licenses held	All respondents	Civilian dentists		Armed Forces
		In South Dakota	Out-of-State	
Total	100	100	100	100
South Dakota only	26	36	-	23
Licensed in 1 other State	56	53	63	62
Licensed in 2 other States	14	10	26	15
Licensed in 3 or more other States	4	1	11	-

Civilian Dentists in South Dakota

Sources of Supply

Dental schools.--Graduates of 17 dental schools are represented among South Dakota's dentists, including one dental school, Detroit College, which is no longer in existence (Table 3). However, more than three-fifths of the dentists are graduates of four dental schools in three adjacent States--University of Minnesota (23 percent), Creighton University (18 percent), University of Iowa (13 percent), and University of Nebraska (7 percent). Three dental schools in Illinois, notably Northwestern and Loyola in Chicago, have contributed another 27 percent of South Dakota's dentists. Marquette is the only other school to have graduated 10 or more of the State's dentists.

Table 3.--School Awarding Dental Degree by Year Awarded

Dental school attended	Number of dentists	All years	Year of graduation		
			After 1955	1941-1955	1940 or earlier
Total	239[1]	-	48	77	111
			(Percent distribution by school)		
Minnesota	56	23	40	22	18
Creighton	44	18	17	24	13
Northwestern	37	16	4	16	21
Iowa	30	13	8	5	20
Loyola (Chicago)	21	9	-	12	11
Nebraska	16	7	13	9	3
Marquette	10	4	8	4	3
Other schools	25	10	10	8	11

[1] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item (see Appendix Table A).

The University of Minnesota, which through the years has contributed a significant portion of dentists to the State, has since 1955 graduated 40 percent of the new dentists in South Dakota. Northwestern and Iowa together supplied over two-fifths of the State's dentists graduating prior to World War II, but only 12 percent of those graduated since 1955.

Dentists relocating in South Dakota.--Less than one-fifth of all dentists currently located in South Dakota reported they had previously been located elsewhere (Table 4). Over three-fifths of these in-migrant dentists had moved from Minnesota and three other adjacent States. The greatest in-migration took place during the years 1945-1959.

Table 4.--In-migrant Dentists

Last previous location	Number of dentists	Percent of dentists
Total	239	100
Previously located elsewhere	44	18
Minnesota	12	5
Iowa	7	3
Nebraska	6	2
Other	19	8
Never located elsewhere	195	82

Personal Characteristics

Age and sex.--The median age of dentists reporting their age was relatively high--48.6 years. Even so, almost one-third of the dentists were between 35 and 45 years of age (Table 5). Only 11 percent of the dentists were younger. A substantial number of the State's dentists were well along in years. Over one-fourth--58 dentists--were 65 years old and over, and in this group were 34 who were 70 years old or over, including 15 who had reached 75 years of age.

Only 2 of the 239 civilian dentists responding in the survey are women. Since they are so few, data will not be shown separately for them.

Table 5.--Age and Sex

Sex and age	Number of dentists	Percent of dentists
Total	239	100
Male	237	99
Female	2	1
Under 30	8	3
30 - 34	18	8
35 - 39	31	14
40 - 44	40	18
45 - 49	22	10
50 - 54	14	6
55 - 59	18	8
60 - 64	17	7
65 - 69	24	11
70 - 74	19	8
75 & over	15	7

Advanced training.--Eleven percent of South Dakota's dentists reported some kind of advanced training (Table 6). Only 6 percent have had advanced clinical training, whereas 8 percent have completed at least one year of advanced academic training, including 5 percent who have earned a master's degree since leaving dental school. Over one-half of the 27 dentists with advanced training graduated from dental school since 1950.

Table 6.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
Total	239	100
With advanced training	27	11
With no advanced training	212	89
Clinical training		
Residency completed	4	2
Internship completed	9	4
Academic training		
M.A., M.S., or other masters	13	5
Postgraduate 1 year or more (no degree)	7	3

Distribution and Current Status

Distribution of dentists.--The largest concentration of dentists in South Dakota is in the Sioux Falls metropolitan area (Minnehaha County) and in Pennington County, the one nonmetropolitan county with a central city of 25,000-49,999 residents (Table 7). Almost one-third of the State's licensed civilian dental force is located in these two counties. Another one-fifth of the dentists are in six counties with central cities of 10,000-24,999 population. The number of dentists per county steadily declines among the county groups as the size of the county's central city decreases. Among the 44 counties in the smallest size category (counties with central cities of under 2,500 inhabitants) those with licensed civilian dentists have fewer than 2 dentists per county. Sixteen of these counties had no dentists reporting. However, not all of these counties were necessarily without the services of a dentist. For instance, one-half of the counties from which no dentists reported have relatively large Indian populations, and since dentists employed by the Federal Government in such agencies as the Division of Indian Health of the Public Health Service are not required to be licensed in the State in which they are assigned, there is every likelihood that the survey results underestimate the dental force available to the residents of these counties, and perhaps also to those of a few of the counties with reporting dentists.

Table 7.--Distribution, by County Group

County size category	Number of counties	Number of dentists	Percent of dentists			
			Total	By age		
				Under 45	45-64	65 & over
Total	67	239	100	43	31	26
Sioux Falls metropolitan area	1	39	16	52	31	17
Nonmetropolitan county groups						
Central city 25,000-49,999	1	32	14	67	23	10
Central city 10,000-24,999	6	51	21	38	21	42
Central city 5,000-9,999	4	27	11	30	37	33
Central city 2,500-4,999	11	32	14	42	32	26
Central city under 2,500	44	58	24	35	43	22

As the data in Table 7 reveal, there are marked differences in the age distribution of reporting dentists in the various county groups. A relatively large percentage of the dentists in the two county groups with medium-sized central cities (5,000-24,999 inhabitants) are 65 years old or over. By contrast, in Minnehaha and Pennington counties 52 and 67 percent, respectively, of the dentists were under 45 years of age in 1965. Of the 51 counties with reporting dentists, 35 have no dentists under 35 years of age. Included in this total are 17 counties with no dentist under 45 years old and 9 with no dentist under 40.

Professional status.--Of the 239 civilian dentists in South Dakota, 231 reported that they were professionally active at the time of the survey. Two dentists regarded themselves as fully retired and the remaining 6 did not report on their current status.

There was one professionally active responding dentist for every 3,060 persons in South Dakota in 1965 (Table 8). The sole dentist reporting from Jackson County was not professionally active, raising to 17 the number of counties that must be assumed to be without a dentist. Among remaining counties, the number of persons per active dentist ranged from 1,670 in Davison County to 8,100 in McCook County (see Appendix Table B for individual county data). Of the 50 counties with dentists who were professionally active, 20 had dentist-population ratios as favorable as the State average. In addition to McCook County, there were 6 counties with ratios in excess of one dentist per 5,000 persons--Deuel (6,400), Marshall (6,000), Spink (5,800), Edmunds (5,400), Dewey (5,300), and Charles Mix (5,050).

Table 8.--Distribution of Professionally Active Dentists

County size category	Professionally active dentists	Civilian population	Persons per dentist
Total	231	706,800	3,060
Sioux Falls metropolitan area	37	99,200	2,681
Nonmetropolitan county group			
Central city 25,000-49,999	32	76,400	2,388
Central city 10,000-24,999	49	132,300	2,700
Central city 5,000-9,999	26	58,400	2,246
Central city 2,500-4,999	31	106,000	3,419
Central city under 2,500	56	234,500	4,188

Professional Activity

As might be expected, self-employment predominates among dentists who are active in the profession. Of the 231 professionally active dentists licensed in South Dakota, 96 percent are primarily in private practice. The remaining few dentists are either employed by another dentist or by a governmental agency.

All but one dentist reporting on their professional activity in South Dakota last year indicated that they had provided care for patients. Dentists reporting on time spent last year in providing patient care devoted an average of 47.2 weeks to this activity and worked an average of 40.4 hours per week. The figures in Table 9 show that one in every ten reporting dentists spent the equivalent of 8 hours or more per day at this activity six days per week, for 48 or more weeks per year.

Table 9.--Time Spent in Patient Care Last Year

Weeks of activity reported	Dentists providing patient care	Percent of total				
		48 hours or more	41-47 hours	40 hours	35-39 hours	Under 35 hours
Total reporting time spent	100	14	19	36	20	11
50 weeks or more	34	5	6	14	7	2
48 - 49 weeks	37	5	8	14	7	3
40 - 47 weeks	24	4	4	6	5	5
Less than 40 weeks	5	-	1	2	1	1

Practice Characteristics

Limited practices.--Only 13 of the dentists in South Dakota reported that they limit their practices to a dental specialty. Almost one-half of these dentists reported their specialty area in orthodontics. Specialization was most common in Minnehaha and Pennington Counties where over 10 percent of the dentists reported limited practices.

Use of auxiliaries.--Four in every five dental practitioners report that they employ auxiliary personnel of some type (Table 10). Dental assistants are the most frequently employed auxiliary. Almost 75 percent of all practitioners employ assistants, including 68 percent who employ one or more full time. Twelve percent of the practitioners employ hygienists, while only five percent employ a laboratory technician. A majority of the dentists who employ hygienists or technicians do so only part time.

Table 10.--Dental Practitioners Employing One or More Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	
	Number	Percent
Total	231	100
With no auxiliary	48	21
With one or more auxiliaries	183	79
With assistant	170	74
With hygienist	28	12
With laboratory technician	12	5
With secretary or receptionist	58	25
With other type of personnel	9	4

The use of auxiliaries varies with the age of the dentist (Table 11). Well over 90 percent of the dental practitioners under age 35 and between the ages of 45 and 54 employed some type of auxiliary. Among dentists 65 years and over, the proportion using auxiliaries dropped to approximately 50 percent. Peak utilization of dental assistants occurs among dentists under 45 years of age. By contrast, a larger proportion of the dentists aged 55-64 employed hygienists than in any other age group.

Table 11.--Percent of Dental Practitioners Employing Auxiliaries, by Age

Age	Percent of age group		
	With auxiliaries	With assistants	With hygienists
Under 35	96	88	15
35 - 44	88	88	13
45 - 54	92	83	11
55 - 64	76	71	18
65 & over	51	40	7

Twenty-three percent of the dental practitioners in South Dakota reported one or more vacant positions for auxiliary personnel. Approximately 47 percent of the vacancies were for hygienists, and another 21 percent were for assistants. Most dentists reporting a hygienist vacancy did not currently employ a hygienist, whereas most dentists desiring to employ an assistant were already utilizing at least one assistant.

April 1966.

Appendix Table A.--Summary Statistics Used in Text

	Number of dentists
Total dentists licensed in South Dakota	426
Respondents -- total dentists participating in survey (number not reporting current location or military status - 8)	362
Civilian dentists in South Dakota[1] (designated simply as "dentists" in text tables)	239
(number not reporting: age - 13, principal current employment - 6, year of graduation - 3)	
Professionally active dentists[2]	231
In limited practice[3]	13
Dental practitioners[4]	231
Located in South Dakota last year:	
Reported professional activity[5]	206
Dentists providing patient care[6]	205
Reported time spent in patient care[7]	172
Dentists in private practice[8]	205
Reported time spent in practice[9]	169
Out-of-State dentists -- civilian respondents not located in South Dakota	102

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[1] All responding dentists who currently work in South Dakota (excluding those in the Armed Forces) or who are retired and currently live in the State.

[2] All active civilian dentists currently in South Dakota--excludes 2 dentists who are fully retired and 6 who did not report their principal current activity.

[3] Dentists who reported they limited their practice to a dental specialty.

[4] All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

[5] Dentists located in South Dakota last year who indicated type(s) of activity in which they engaged.

[6] All dentists who engaged in patient care last year, either as a primary or secondary activity.

[7] Dentists reporting both hours and weeks spent in patient care last year.

[8] Dentists who reported they were primarily self-employed both currently and last year.

[9] Dentists reporting both hours and weeks spent last year as a self-employed dentist.

Appendix Table B.--County Data

County	Civilian population (in 000's)	Professionally active dentists	Persons per dentist 1/
All counties	706.8	231	3,060
Aurora	4.6	1	4,600
Beadle	23.4	7	3,343
Bon Homme	9.1	4	2,275
Brookings	21.1	6	3,517
Brown	34.7	11	3,155
Brule	6.3	2	3,150
Butte	8.7	3	2,900
Charles Mix	10.1	2	5,050
Clay	10.7	5	2,140
Codington	21.4	12	1,783
Custer	4.6	1	4,600
Davison	16.7	10	1,670
Day	9.8	5	1,960
Deuel	6.4	1	6,400
Dewey	5.3	1	5,300
Douglas	4.9	1	4,900
Edmunds	5.4	1	5,400
Fall River	10.8	5	2,160
Grant	9.7	3	3,233
Gregory	6.8	2	3,400
Haakon	3.3	1	3,300
Hamlin	5.9	3	1,967
Hand	6.6	2	3,300
Hanson	4.4	1	4,400
Hughes	15.0	3	5,000
Hutchinson	10.9	3	3,633
Hyde	2.5	1	2,500
Jones	1.9	1	1,900
Kingsbury	8.7	5	1,740
Lake	11.7	3	3,900
Lawrence	17.3	8	2,163
Lincoln	12.2	3	4,067
McCook	8.1	1	8,100
McPherson	5.2	2	2,600
Marshall	6.0	1	6,000
Meade	12.4	4	3,100
Miner	4.9	1	4,900
Minnehaha	99.2	37	2,681
Moody	8.7	2	4,350
Pennington	76.4	32	2,388
Perkins	5.0	2	2,500
Potter	5.0	2	2,500
Roberts	12.5	3	4,167
Spink	11.6	2	5,800
Stanley	4.9	1	4,900
Tripp	8.6	2	4,300
Turner	10.7	6	1,783
Union	9.8	3	3,267
Walworth	8.3	3	2,767
Yankton	18.7	10	1,870
17 counties with no reporting dentists 2/	59.9	-	--

1/ In a few counties which have a relatively large Indian population, such as Charles Mix and Dewey Counties, the ratios presented above are slightly less favorable than if computed only for the non-Indian population.

2/ There are 16 counties with no civilian dentists reporting: Bennett, Buffalo, Campbell, Clark, Corson, Faulk, Harding, Jerauld, Lyman, Mellette, Sanborn, Shannon, Sully, Todd, Washabaugh and Ziebach. In addition, there was one county--Jackson--in which the one responding civilian dentist was reported as professionally inactive.

DENTISTS LICENSED IN TENNESSEE

During the 1965 registration period, 2,103 dentists registered with the Tennessee Board of Dental Examiners (Table 1). Sixty-nine percent of the registered dentists were civilians located in Tennessee, another 29 percent were civilians located in other states, and only 2 percent were on active duty in the armed forces.

Table 1.--Location and Military Status

Location and military status	All dentists	Percent of dentists
Total licensed	2,103	100
Respondents	1,886	90
Nonrespondents	217	10
Total licensed	2,103	100
Civilians in Tennessee	1,455	69
Respondents	1,355	-
Nonrespondents	100	-
Civilians in another state	600	29
On active duty with armed forces	43	2
Not reported	5	*

* Less than one-half of one percent.

The survey questionnaire was completed by 1,886 dentists, 90 percent of all those registered. The response rate of the 1,455 civilian dentists actually located in Tennessee was even higher, 93 percent, with 1,355 of these dentists replying. Certain items of information--state and county location, age, dental school attended, and year of graduation--were obtained on nonrespondents either from records maintained by the Tennessee Board of Dental Examiners or from the 1966 American Dental Directory published by the American Dental Association. Tables in this report include information on both respondents and nonrespondents unless otherwise indicated.

Of all dentists responding to the survey, over half (56 percent) hold a license solely in Tennessee, 35 percent are licensed in one other state, and 9 percent hold licenses in two or more additional states. Multiple licensure is not as common among civilian respondents located in Tennessee as among those located in other states. Three-fourths of the civilian in-state dentists are licensed just in Tennessee, 20 percent are licensed in one other state, and only one in every 20 hold licenses in two or more other states. By comparison, almost one in every four of the out-of-state civilian respondents holds two or more licenses in addition to the one held in Tennessee.

Civilian Dentists in Tennessee

Sources of Supply

Dental schools.--More than 85 percent of Tennessee's dentists graduated from dental schools located in Tennessee, including those schools at the University of Tennessee and Meharry Medical College and those formerly in existence at Vanderbilt University and the University of West Tennessee (Table 2). Over three-fourths of the State's dentists received their dental degrees from the University of Tennessee. This one school has consistently graduated the largest number of dentists in Tennessee, with the proportion increasing from 56 percent of the dentists who graduated prior to World War II to 90 percent of those who graduated within the last 10 years. The relative contribution of Meharry Medical College has declined from 6 percent of the total supply before 1940 to only 2 percent since 1955. Vanderbilt University graduated 6 percent of the dentists in the state, even though its dental school closed in 1926.

Table 2.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	1,455[1/]	-	372	625	408
		(Percent distribution by school)			
South	1,382	95	96	94	95
Tennessee	1,101	76	91	80	56
Vanderbilt (extinct)	85	6	-	-	20
Meharry	57	4	2	3	6
Emory	56	4	*	4	7
Louisville	51	3	1	5	3
7 other schools	32	2	2	2	3
Other regions (20 schools)	69	5	4	6	5

1/ Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire, or, in the case of nonrespondents, due to the data not being obtainable for all dentists. For each item where percentages are shown, they are based on the number of dentists for whom the data are known. (See Appendix Table A.)

* Less than one-half of one percent.

Eight other dental schools in the South have trained an additional 9 percent of Tennessee's dentists. Principal contributors among these schools have been Emory University and the University of Louisville. However, the contribution of these 8 dental schools has declined from 12 percent of the graduates prior to 1941 to about 3 percent of those who completed their dental education during the last 10 years. The remaining 5 percent of the dentists in Tennessee received their dental degrees from 20 schools in other regions of the Nation with only one school, Northwestern University, supplying as much as 1 percent of the State's dentists.

Dentists relocating in Tennessee.--Seven percent of the respondents practiced as civilian dentists in one of 26 other states or the District of Columbia immediately prior to assuming their present Tennessee location. Almost three-fourths of the 92 in-migrant dentists came from another Southern state including 1 in every 4 who moved to Tennessee from Virginia or Alabama, and 1 in every 7 who came from Arkansas or Texas.

Personal Characteristics

Age.--The median age in 1965 of dentists licensed in Tennessee was 42.9 years. Half of the State's dentists are between 35 and 54, including one in every three who is in the 35 to 44 age group (Table 3). Dentists 55 years of age or older slightly outnumber those under 35. Almost one in every eight, or 169 dentists, is 65 years old or over, and 89 have reached the age of 70.

Table 3.--Age Distribution

Age in 1965	Number of dentists	Percent of dentists
Total	1,455	100
Under 35	348	24
35 - 44	478	33
45 - 54	252	17
55 - 64	196	14
65 & over	169	12

A relatively large proportion of survey nonrespondents are in the older age groups. Fully one-fourth of the nonresponding dentists are 65 years of age or older, but only 10 percent of the respondents are in this age group. Moreover, the median age of dentists not responding to the survey is 46.4 years, almost 4 years higher than that for respondents.

Advanced training.--Eighteen percent of the survey respondents, or 240 dentists, reported they had completed one year or more of advanced training (Table 4). The number of dentists who completed clinical training almost equals the number who completed graduate or postgraduate academic work. In advanced clinical training, 51 dentists completed a residency and 90 an internship. Among the dentists who reported advanced academic training, 10 had earned a second doctorate, 64 a master's degree, and another 79 received no additional degrees but had completed one or more years of postgraduate study. These figures include 54 dentists who completed both clinical and academic training.

Table 4.--Advanced Training[1/]

Type of advanced training	Number of dentists	Percent of dentists
Total	1,355	100
With advanced training	240	18
Clinical training only	87	7
Academic training only	99	7
Both clinical and academic training	54	4
With no advanced training	1,115	82

[1/] Includes survey respondents only.

Additional education beyond receipt of the dental degree is more common among dentists in the younger age groups. Twenty-two percent of the dentists under 40 years of age have had a year or more of advanced training, compared with 17 percent of those 40 to 54 years old and 12 percent of those 55 and over. The growing tendency for young dentists to seek additional training is most pronounced in the academic areas.

Distribution and Current Status

Distribution of dentists.--Dentists in Tennessee are unevenly distributed geographically, with slightly more than 70 percent located in only 10 of the State's 95 counties. Six of these 10 counties, each of which has 20 or more dentists, are located in metropolitan areas. The remaining four are nonmetropolitan counties, i.e., they have central cities of less than 50,000 population, and they are not part of a multi-county grouping with a central city of 50,000 or more. Appendix Table B lists individual counties by size of central city and presents selected data for the dentists in each county.

More than three-fifths of the dentists in Tennessee are located in the four metropolitan areas of the State (Table 5). The greatest concentration of dentists, almost 400, is in Shelby County which constitutes the

Tennessee portion of the Memphis interstate metropolitan area. The metropolitan areas of Nashville and Knoxville, which contain three counties each, have the second and third largest dental forces. The Tennessee portion of the Chattanooga interstate metropolitan area, Hamilton County, has the fourth largest dentist supply in the State.

Table 5.--Distribution by County Group

County group	Number of counties	Number of dentists	Percent of dentists
All counties	95	1,455	100
All metropolitan areas	8	920	63
Memphis area	1	391	27
Nashville area	3	230	16
Knoxville area	3	183	12
Chattanooga area	1	116	8
Nonmetropolitan counties	87	535	37
Central city 10,000-49,999	14	253	18
Central city 5,000-9,999	17	131	9
Central city 2,500-4,999	21	90	6
Central city under 2,500	35	61	4

Some of the nonmetropolitan counties have fairly large numbers of dentists. For example, of the 14 counties containing a central city of 10,000 or more people, Sullivan County has 57 dentists and 3 other counties--Madison, Washington and Montgomery--each have more than 20 dentists. By contrast, only 4 of the 73 counties without a city of this size have as many as 10 dentists. All 4 of these counties are in the group of 17 counties with central cities of 5,000-9,999 inhabitants. The 21 counties with central cities of 2,500-4,999 population include 14 with fewer than 5 dentists. None of the 35 counties with less than 2,500 persons in their central cities have as many as 5 dentists, and 4 of these counties--Clay, Meigs, Pickett, and Van Buren--have no dentists according to available information.

The age distribution of dentists is similar throughout the State. The median age and the proportion of dentists in each age group is almost identical in the metropolitan and nonmetropolitan areas.

Active dentists in relation to population.--During the 1965 registration period about 1,400 dentists in Tennessee were active in their profession. These dentists represented 96 percent of all those in the State. The remaining 4 percent included 26 responding dentists who were retired, 12 engaged principally in a nondental activity, and 13 nonresponding dentists who are known to be 70 years of age or older. Based on these counts, Tennessee had one professionally active dentist for every 2,663 persons in 1965 (Table 6).

Table 6.--Number of Persons Per Dentist

County group	Professionally active dentists	Population	Persons per dentist
All counties	1,404	3,738,800	2,663
All metropolitan areas	889	1,855,800	2,088
Memphis area	376	708,100	1,883
Nashville area	223	501,600	2,249
Knoxville area	179	389,000	2,173
Chattanooga area	111	257,100	2,316
Nonmetropolitan counties	515	1,883,000	3,656
Central city 10,000-49,999	247	705,900	2,858
Central city 5,000-9,999	124	447,700	3,610
Central city 2,500-4,999	85	398,500	4,688
Central city under 2,500	59	330,900	5,608

The four metropolitan areas have proportionately more of the State's dentists than of its population--63 percent of the State's active dentists as compared with only 50 percent of the population. As a result of this disproportionate distribution of dentists in relation to population, there is one dentist for every 2,088 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of one dentist for every 3,656 persons. Each of the four metropolitan areas also has a more favorable persons-per-dentist ratio than any of the nonmetropolitan county groups. The Memphis metropolitan area has the best persons-per-dentist ratio in the State, 1,883. The persons-per-dentist ratios in the other three metropolitan areas are slightly less favorable--2,173 in the Knoxville area, 2,249 in the Nashville area, and 2,316 in the Chattanooga area.

In both of the three-county metropolitan areas, there is a considerably better persons-per-dentist ratio in the county with the largest population than in the other two counties. In the Knoxville area, Knox County has a ratio of 1,906, while the ratio for Blount County is 2,790 and for Anderson County, 3,442. In the Nashville area the contrast is also quite sharp with Davidson County, containing Nashville, having a ratio of 2,126 compared with 3,538 in Wilson County and 3,750 in Sumner County. (See Appendix Table B for individual county data.)

Among the nonmetropolitan counties of the State, the group of counties with central cities of 10,000-49,999 population have an average of 2,858 persons per dentist. Of the 14 counties in this group, 5 have ratios better than the State average--Sullivan (2,239), Madison (2,304), Washington (2,515), Dyer (2,527), and Green (2,624). Six of the remaining 9 counties have relatively favorable ratios of fewer than 3,500 persons per dentist.

On the average, there are 4,392 persons per dentist in the three groups of nonmetropolitan counties with central cities under 10,000 population. In general, the ratio of persons per dentist becomes less favorable as the size of the central city declines. The average ratio increases from 3,610 persons per dentist in the group of counties with central cities between 5,000-9,999 population to 4,688 among the counties with 2,500-4,999 persons in their central cities and to 5,608 persons per dentist among the counties with fewer than 2,500 persons in their central cities. Only 5 of the 73 counties with central cities under 10,000 population have ratios better than the State average, while many of these counties have considerably less favorable ratios. For example, 5 of the 17 counties with 5,000-9,999 persons in their central cities have ratios exceeding 5,000 persons per dentist. Ten of the 21 counties with central cities between 2,500-4,999 persons also have ratios over 5,000, including 3 counties with ratios over 7,500--Monroe (7,567), Hawkins (7,625), and Chester (8,900). Among the 35 counties with central cities of less than 2,500 persons, which account for over one-third of all counties in the State, 21 have ratios in excess of 5,000 persons per dentist, including the 4 counties which are assumed to have no dentist. Seven of these counties have more than 7,500 persons per dentist--Decatur (7,800), Cannon (8,100), Lake (8,500), Grundy (10,900), Wayne (11,000), Fayette (11,650), and Morgan (13,700).

Professional Activity

Current employment.--Of the 1,317 responding dentists who reported that they were professionally active at the time of the survey, 92 percent were primarily engaged in private practice with 91 percent self-employed and one percent employed by another dentist (Table 7). About four percent are on the staffs of dental schools at the University of Tennessee and Meharry Medical College and the remaining four percent are either employed by Federal, State or local government agencies or engaged in other dental employment.

Table 7.--Current Employment of Professionally Active Dentists[1/]

Type of employment	Principal employment		Secondary employment[2/]	
	Number employed	Percent	Number employed	Percent of total
Total	1,317	100	161	12
Self-employed	1,203	91	20	2
Employed by other dentist	17	1	3	*
On staff of dental school	48	4	54	4
Employed by State or local government	23	2	52	4
Employed by Federal Government	7	1	-	-
Voluntary agency	-	-	12	1
Other dental employment	19	1	29	2

1/ Includes survey respondents only.

2/ Individual items add to more than total because some dentists reported more than one type of secondary employment.

* Less than one-half of one percent.

About 160 dentists reported at least one part-time dental activity in addition to their principal employment. Fifty-two of these dentists said they were employed by the State or local governments on a part-time basis providing dental services in hospitals and local health clinics. The number of dentists so employed is more than twice the number reporting their principal employment as working for these governmental agencies. Part-time faculty appointments at the two dental schools were reported by 54 dentists, which slightly exceeds the number of dentists reporting dental school appointments as their principal employment. Other types of secondary dental activity reported by the dentists include self-employment and employment by voluntary agencies.

Activity last year.--Of all dentists reporting their professional activity in Tennessee last year, 95 percent said they provided care to patients. These dentists spent 92 percent of the total reported professional time in providing patient care. Eight percent of the dentists reported they spent some time in teaching and 2 percent reported some time in research, but only 5 percent of total professional time was spent in these activities. While 6 percent of the dentists spent time in some other dental activity, such as taking additional training, only 3 percent of the total professional time was spent in these activities.

Of the dentists who provided patient care, 85 percent reported having spent 48 weeks or more at this activity in the previous year. Dentists who worked all year (48-52 weeks) spent longer hours providing patient care than did those who worked only part of the year. Almost 8 of every 10 dentists spending 48 weeks or more in patient care worked 40 or more hours per week, while only 6 of every 10 working less than 48 weeks spent as many hours each week providing care.

Practice Characteristics

Limited practices.--Among dentists reporting type of practice, 135, or slightly more than one in every 10, limit their practices to a dental specialty. Almost two-thirds of these dentists reported limiting their practices to one of two specialty areas--38 percent in orthodontics and 27 percent in oral surgery.

The metropolitan areas have a disproportionate share of the dentists with limited practices. Over four-fifths of the dentists who reported limiting their practices are located in the State's metropolitan areas. One in every 7 dentists practicing in a metropolitan area limits his practice, whereas in counties which are not part of metropolitan areas, only one in every 20 dentists does so. The Memphis area alone has over one-third of the State's dentists with limited practices, and almost twice as many as all 87 nonmetropolitan counties combined.

Use of auxiliaries.--About 86 percent of the dental practitioners in Tennessee (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 8). The vast majority, 80 percent, of the practitioners employ at least one auxiliary full time, while only 6 percent employ part-time auxiliaries exclusively. Dental Assistants are the most frequently employed auxiliary--usually on a full-time basis. Approximately 79 percent of the practitioners employ an assistant, including 72 percent who do so full time. Secretaries or receptionists are employed by 30 percent of the dentists, and a majority of these dentists employ at least one of them full time. Dental hygienists and laboratory technicians are much less frequently utilized by dentists in Tennessee than are assistants and secretaries, and they are more likely to be employed on a part-time basis. While 16 percent of all dentists employ dental hygienists and 6 percent employ dental technicians, over one-half and four-fifths, respectively, of the dentists employing these personnel do so on a part-time basis.

Table 8.--Dental Practitioners Employing Auxiliaries, by Type of Auxiliary[1]

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time personnel
Total	1,276	100	80	6
With one or more auxiliaries	1,079	86	80	6
With assistant	996	79	72	7
With hygienist	203	16	7	9
With laboratory technician	76	6	1	5
With secretary or receptionist	376	30	20	10
With other type personnel	72	6	2	4
With no auxiliary	181	14	-	-

[1] Includes survey respondents only.

The use of auxiliaries varies with the age of the dentist and is more frequent among the young dentists. Ninety-one percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. However, the proportion of practitioners utilizing auxiliaries decreases to 84 percent among dentists 45 to 64 years old and drops to 62 percent among dentists 65 and over.

Although dentists in the metropolitan areas are no more likely to employ auxiliary personnel than are those located in the nonmetropolitan areas, the use of hygienists is considerably more common in the metropolitan areas than in the remainder of the State. About 20 percent of the dentists in the metropolitan areas report the employment of a hygienist, compared with only 9 percent of the dentists located elsewhere.

About 16 percent of the responding dentists in Tennessee reported one or more vacant positions for auxiliary personnel. Vacancies were reported most frequently for dental hygienists and dental assistants.

Out-of-State Civilian Dentists

At the time of the survey, Tennessee licenses were maintained by 483 civilian respondents located in 38 States and the District of Columbia. Over three-fourths of these out-of-State dentists are located in Southern States and almost two out of every five are in Florida, Arkansas, or Mississippi. Georgia, North Carolina, Alabama, and Texas are the only other States in which at least five percent of these dentists are currently located. Three in every four of the out-of-State dentists are graduates of the dental school at the University of Tennessee.

Almost one in every five out-of-State respondents reported they had been professionally active in Tennessee immediately prior to assuming their present location in another State. Sixty of the 85 reporting out-migrant dentists moved to another Southern State, most frequently Florida, Georgia, or North Carolina, and the remaining 25 dentists moved to 15 other States scattered across the Nation.

June 1967.

Appendix Table A.--Summary Statistics for Tennessee

	Total dentists	Responding dentists	Nonresponding dentists
Total dentists licensed in Tennessee	2,103[1]	1,886[1]	217[2]
Civilian dentists in Tennessee[3] (designated simply as "dentists" in text tables)	1,455	1,355	100
Professionally active dentists[4]	1,404	1,317	87
Dental practitioners[5]	-	1,276	-
In limited practice[6]	-	135	-
Located in Tennessee last year:			
Reported professional activity[7]	-	1,273	-
Dentists providing patient care[8]	-	1,205	-
Reported time spent in patient care[9]	-	933	-
Civilian dentists in another State	600	483	117
Dentists on active duty in Armed Forces	43	43	-

1/ Includes 5 dentists not reporting current location or military status.

2/ Data for nonresponding dentists were obtained from the Tennessee Board of Dental Examiners, and from the 1966 American Dental Directory published by the American Dental Association.

3/ All dentists who currently work in Tennessee (excluding those in the Armed Forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 50, age - 12, dental school attended - 4.

4/ Includes all responding dentists who reported they were professionally active in Tennessee at the time of the survey and all nonrespondents known to be under 70 years of age.

5/ All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

6/ Dentists who reported they limited their practice to a dental specialty.

7/ Dentists located in Tennessee last year who indicated type(s) of activity in which they engaged.

8/ All responding dentists who engaged in patient care last year, either as a primary or a secondary activity.

9/ Dentists reporting both hours and weeks spent in patient care last year.

Appendix Table B.--Selected Data on Dentists in Tennessee, by Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 years or more			
All counties	1,455	1,355	100	348	365	1,404	3,738.8	2,663
Metropolitan areas[2]	920	859	61	222	232	889	1,855.8	2,088
Memphis area	391	374	17	93	96	376	708.1	1,883
Shelby	391	374	17	93	96	376	708.1	1,883
Nashville area	230	205	25	55	61	223	501.6	2,249
Davidson	212	189	23	47	59	205	435.8	2,126
Sumner	10	9	1	5	1	10	37.5	3,750
Wilson	8	7	1	3	1	8	28.3	3,538
Knoxville area	183	174	9	46	44	179	389.0	2,173
Knox	142	134	8	36	37	139	265.0	1,906
Blount	21	20	1	4	5	21	58.6	2,790
Anderson	20	20	-	6	2	19	65.4	3,442
Chattanooga area	116	106	10	28	31	111	257.1	2,316
Hamilton	116	106	10	28	31	111	257.1	2,316
Nonmetropolitan counties[3]	535	496	39	126	133	515	1,883.0	3,656
Central city 25,000-49,999	112	105	7	27	21	111	257.8	2,323
Madison	28	27	1	7	6	28	64.5	2,304
Sullivan	57	54	3	16	7	56	125.4	2,239
Washington	27	24	3	4	8	27	67.9	2,515
Central city 10,000-24,999	141	131	10	35	35	136	448.1	3,295
Bedford	7	7	-	1	3	7	23.8	3,400
Bradley	11	11	-	2	3	11	43.9	3,991
Carter	10	9	1	3	5	7	41.1	5,871
Coffee	12	11	1	3	2	11	31.3	2,845

Appendix Table B.--Selected Data on Dentists in Tennessee, by Location - (continued)

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond- ents	Non- respond- ents	Age in 1965		Profes- sionally active		
				Under 35	55 years or more			
Central city 10,000-24,999 (continued)								
Dyer	11	10	1	2	4	11	27.8	2,527
Greene	17	16	1	5	7	17	44.6	2,624
Hamblen	12	11	1	3	1	12	41.1	3,425
McMinn	8	7	1	1	3	7	34.5	4,929
Maury	13	12	1	3	1	13	41.8	3,215
Montgomery	22	20	2	6	4	22	61.2	2,782
Rutherford	18	17	1	6	2	18	57.0	3,167
Central city 5,000-9,999	131	117	14	26	47	124	447.7	3,610
Campbell	5	5	-	1	2	5	24.8	4,960
Cocke	4	4	-	1	2	4	23.5	5,875
Dickson	5	5	-	1	1	5	18.8	3,760
Gibson	14	13	1	3	4	14	43.1	3,079
Giles	6	5	1	1	2	6	20.5	3,417
Haywood	4	4	-	-	1	4	22.2	5,550
Henry	12	9	3	3	6	11	22.0	2,000
Lawrence	7	6	1	1	2	7	27.9	3,986
Lincoln	7	6	1	-	3	6	23.1	3,850
Marshall	3	3	-	-	1	3	16.4	5,467
Obion	8	8	-	3	3	8	25.9	3,238
Putnam	11	10	1	2	5	9	30.9	3,433
Roane	19	16	3	5	6	18	42.6	2,367
Robertson	8	7	1	1	3	7	27.3	3,900
Tipton	5	5	-	1	1	5	27.9	5,580
Warren	8	8	-	2	3	8	25.1	3,138
Williamson	5	3	2	1	2	4	25.7	6,425

Appendix Table B.--Selected Data on Dentists in Tennessee, by Location - (continued)

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 years or more			
Central city 2,500-4,999	90	86	4	22	15	85	398.5	4,688
Benton	4	4	-	1	1	3	10.2	3,400
Carroll	5	4	1	2	-	5	21.9	4,380
Chester	1	1	-	-	-	1	8.9	8,900
Cumberland	3	3	-	-	-	3	19.2	6,400
Franklin	6	6	-	1	1	6	25.6	4,267
Hardeman	4	4	-	1	2	4	20.6	5,150
Hardin	3	3	-	1	-	3	17.5	5,833
Hawkins	4	4	-	1	1	4	30.5	7,625
Henderson	5	5	-	2	1	4	15.5	3,875
Humphreys	3	3	-	-	1	3	11.8	3,933
Jefferson	7	7	-	2	-	7	22.4	3,200
Lauderdale	4	4	-	2	-	4	20.3	5,075
Louden	7	7	-	1	1	7	24.0	3,429
Marion	3	3	-	1	-	3	21.3	7,100
Monroe	3	2	1	-	1	3	22.7	7,567
Overton	3	3	-	-	1	2	13.4	6,700
Rhea	4	3	1	-	-	4	15.7	3,925
Sevier	6	6	-	3	-	6	24.6	4,100
Unicoi	3	2	1	-	1	2	14.6	7,300
Weakley	8	8	-	2	3	7	22.6	3,229
White	4	4	-	2	1	4	15.2	3,800
Central city - Under 2,500	61	57	4	16	15	59	330.9	5,608
Bledsoe	1	1	-	-	1	1	7.4	7,400
Cannon	1	1	-	1	-	1	8.1	8,100
Cheatham	2	2	-	-	-	2	9.5	4,750
Claiborne	4	4	-	1	2	4	16.7	4,175

Appendix Table B.--Selected Data on Dentists in Tennessee, by Location - (continued)

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 years or more			
Central city - under 2,500 (continued)								
Clay	-	-	-	-	-	-	6.7	-
Crockett	3	3	-	1	1	3	13.6	4,533
Decatur	1	1	-	-	1	1	7.8	7,800
DeKalb	4	3	1	1	1	4	10.4	2,600
Fayette	2	1	1	-	1	2	23.3	11,650
Fentress	2	2	-	1	-	2	12.6	6,300
Grainger	2	2	-	-	-	2	12.1	6,050
Grundy	1	1	-	-	-	1	10.9	10,900
Hancock	1	1	-	-	1	1	7.1	7,100
Hickman	2	2	-	-	1	2	11.2	5,600
Houston	1	1	-	-	-	1	4.6	4,600
Jackson	2	2	-	2	-	2	7.8	3,900
Johnson	3	3	-	-	-	3	10.0	3,333
Lake	2	2	-	1	1	1	8.5	8,500
Lewis	2	2	-	-	-	2	6.3	3,150
McNairy	4	3	1	1	1	3	16.9	5,633
Macon	2	2	-	-	1	2	11.5	5,750
Meigs	-	-	-	-	-	-	4.7	-
Moore	1	1	-	1	-	1	3.3	3,300
Morgan	1	1	-	-	-	1	13.7	13,700
Perry	1	1	-	-	-	1	4.7	4,700
Pickett	-	-	-	-	-	-	4.0	-
Polk	2	2	-	1	1	2	11.2	5,600
Scott	2	2	-	1	-	2	14.5	7,250
Sequatchie	3	3	-	1	-	3	6.0	2,000

Appendix Table B.--Selected Data on Dentists in Tennessee, by Location - (continued)

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
Central city - under 2,500 (continued)								
Smith	2	2	-	2	-	2	11.1	5,550
Stewart	2	2	-	-	1	2	7.2	3,600
Trousdale	2	1	1	-	1	2	4.6	2,300
Union	2	2	-	-	-	2	8.4	4,200
Van Buren	-	-	-	-	-	-	3.5	-
Wayne	1	1	-	1	-	1	11.0	11,000

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2/ Tennessee counties included in the latest 1966 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists located in the Tennessee portion of the Memphis SMSA and Chattanooga SMSA.

3/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN TEXAS

A total of 4,180 dentists registered with the Texas State Board of Dental Examiners during the 1965 registration period (Table 1). About 86 percent of the registered dentists were civilians located in Texas at the time of the survey. Civilians located in other states or abroad accounted for only 5 percent of all dentists, and 7 percent were on active duty in the armed forces. Information on location or military status was not available for the remaining 2 percent of the dentists licensed in Texas at the time of the survey.

Table 1.--Location and Military Status

Location and military status	All dentists	Percent of dentists
Total licensed	4,180	100
Respondents	2,923	70
Nonrespondents	1,257	30
Total licensed	4,180	100
Civilians in Texas	3,610	86
Respondents	2,518	-
Nonrespondents	1,092	-
Civilians in another state	227	5
On active duty with armed forces	279	7
Not reported	64	2

The survey questionnaire was completed by 2,923 dentists, or 70 percent of all those registered. The response rate of the 3,610 civilian dentists located in Texas was the same, with 2,518 of these dentists completing the questionnaire. For dentists not responding to the survey, certain items of information--state and county location, military status, dental school attended, year dental degree granted, age and professional status--were obtained from records maintained by the Texas State Board of Dental Examiners, or from the 1965 American Dental Directory, published by the American Dental Association.

Relatively few dentists registered in Texas also maintain licenses in other states. In total, the number of licenses held by the 2,923 respondents is approximately 3,700. An estimate of the total number held by all dentists registered in Texas, assuming a similar occurrence of multiple licensure among nonrespondents, would be about 5,300. Of all dentists responding, nearly four fifths (79 percent) are licensed only in Texas (Table 2). For dentists actually located in Texas, the percentage licensed only in Texas is a high 84 percent. More than three fourths of the dentists on active duty in the Armed Forces hold licenses only in Texas. Among the out-of-state dentists, 71 percent maintain licenses only in Texas in addition to their state of location.

Table 2.--Percent of Dentists Holding Licenses in Other States

Licenses held	All respondents	Civilian dentists		Armed Forces
		In Texas	Out-of-state	
Total	100	100	100	100
Texas only	79	84	-	77
Licensed in 1 other state	16	13	71	18
Licensed in 2 other states	4	2	24	3
Licensed in 3 or more other states	1	1	5	2

Civilian Dentists in Texas

Sources of Supply

Dental schools.--Graduates of 50 dental schools are represented among Texas dentists, including graduates of one Canadian school and of six dental schools which are no longer in existence. However, the great majority of Texas dentists, respondents and nonrespondents alike, are graduates of the dental schools at Baylor University and the University of Texas. These two Texas schools have contributed 79 percent of the state's total dentist supply (Table 3). About 89 percent of those graduating within the past 10 years are from these two schools, as compared with 64 percent of those who were graduated prior to World War II. Practically all of the increase, though, has taken place among graduates of the University of Texas, which has supplied 51 percent of the state's dentists graduating since 1955. In contrast, the proportion of University of Texas graduates among those who completed dental school prior to World War II is 27 percent.

Table 3.--School Awarding Dental Degree, by Year Awarded[1]

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	3,610[2]	-	1,107	1,414	967
		(Percent distribution by school)			
Baylor	1,423	40	38	43	37
Texas	1,384	39	51	38	27
Missouri at Kansas City	78	2	2	2	3
Meharry	63	2	*	2	4
Loyola (New Orleans)	56	2	1	1	2
St. Louis University	52	1	1	2	2
44 other schools	489	14	7	12	25

[1] Includes data obtainable for nonresponding dentists.

[2] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire, or, in the case of nonrespondents, due to the data not being obtainable for all dentists. For each item where percentages are shown, they are based on the number of dentists for whom the data are known. (See Appendix Table A)

* Less than one-half of one percent.

The two dental schools in Texas and 15 other schools in the South have together contributed 88 percent of the state's dentist supply. Eighteen schools in the North Central States account for 10 percent of all dentists. However, the proportion of the state's dentists graduating from these schools has declined substantially in recent years, from a high of 15 percent of the graduates prior to 1941 to a low of 6 percent among those who completed their dental education during the last 10 years. Fourteen dental schools in the Western and Northeastern States combined account for only 2 percent of the state's dentist supply.

Dentists relocating in Texas.--Texas has relatively few active dentists migrating into the state. Only 4 percent of the responding dentists currently located in Texas report previous professional locations as civilians in other states. About one dentist in every four who has moved to Texas came from one of the four adjacent states. The remainder came from 21 other states or abroad. Approximately one-half of the dentists reporting migration into Texas relocated prior to 1950, and about 30 percent moved to the state during the 1960's.

Personal Characteristics

Age.--Texas dentists, on the average, are relatively young, with a median age in 1965 of 43.0 years. The distribution of dentists by age groups indicates that one fourth were under the age of 35, a third were between the ages of 35 and 44, and a fifth were aged 45 to 54 years (Table 4). Even though only 9 percent of the dentists were 65 years old or over, this group represented a substantial number, 319 dentists, including 107 who were 70 to 74 years old and 65 who had reached 75 years of age.

Table 4.--Age Distribution[1/]

Age in 1965	Number of dentists	Percent of dentists
Total	3,610	100
Under 30	226	7
30 - 34	596	18
35 - 39	525	15
40 - 44	615	18
45 - 49	423	12
50 - 54	252	7
55 - 59	241	7
60 - 64	228	7
65 - 69	147	4
70 - 74	107	3
75 and over	65	2

[1/] Includes data obtainable for nonresponding dentists.

The age distribution of dentists responding to the survey was similar to that of all dentists. The median age of respondents was only slightly lower--42.0 years as compared to 43.0 for all dentists. This difference is probably due to the likelihood that nonresponse was more frequent among the older, less active dentists.

Advanced training.--Of the survey respondents, 424 dentists, or 17 percent, reported completion of a year or more of advanced training (Table 5). Nine percent have taken advanced clinical training as compared with 11 percent who have completed at least one year of advanced academic training, including 5 percent who have earned a master's degree since leaving dental school. There are 15 dentists who reported they have earned a second doctorate.

Table 5.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
Total	2,518	100
With advanced training	424	17
Clinical training only	143	6
Academic training only	197	8
Both clinical and academic	84	3
Clinical training		
Residency completed	78	3
Internship completed	149	6
Academic training		
Ph.D., M.D., or other doctor's degree	15	1
M.A., M.S., or other master's degree	124	5
Postgraduate 1 year or more (no degree)	142	5

The growing tendency for dentists to seek training beyond receipt of their dental degree is especially apparent with regard to academic training. Thirteen percent of the dentists under 40 reported completion of a year or more of graduate or postgraduate study, compared with 11 percent of the dentists between 40 and 54, and only 5 percent of those 55 and over. Residencies show the same pattern by age. The trend does not hold true with respect to internships, but chiefly because many dentists in the younger age groups are still in the process of training.

Distribution and Current Status

Distribution of dentists.--The dentists in Texas are concentrated in the more densely populated areas of the state. More than three of every four civilian dentists are located in only 35 of the state's 254 counties. These 35 counties make up the 21 metropolitan areas in Texas. However, even among the metropolitan areas, the number of dentists varies considerably--from well over 700 dentists in the Houston area to fewer than 10 dentists in the Laredo area (Table 6). The four largest metropolitan areas--the Houston, Dallas, Fort Worth and San Antonio areas--have more than one-half of the state's total dentist supply. The Houston area alone has more than one-fifth of the dentists. The Dallas area contains 16 percent of the dentists, while the Fort Worth and San Antonio areas each contains 7 percent. While another

27 percent of the dentists in Texas are scattered among the remaining 17 metropolitan areas in the state, relatively large numbers of dentists are located in the Beaumont-Port Arthur, Austin, Corpus Christi and El Paso areas as compared with the other 13 areas.

Table 6.--Distribution of Dentists by Metropolitan Area[1]

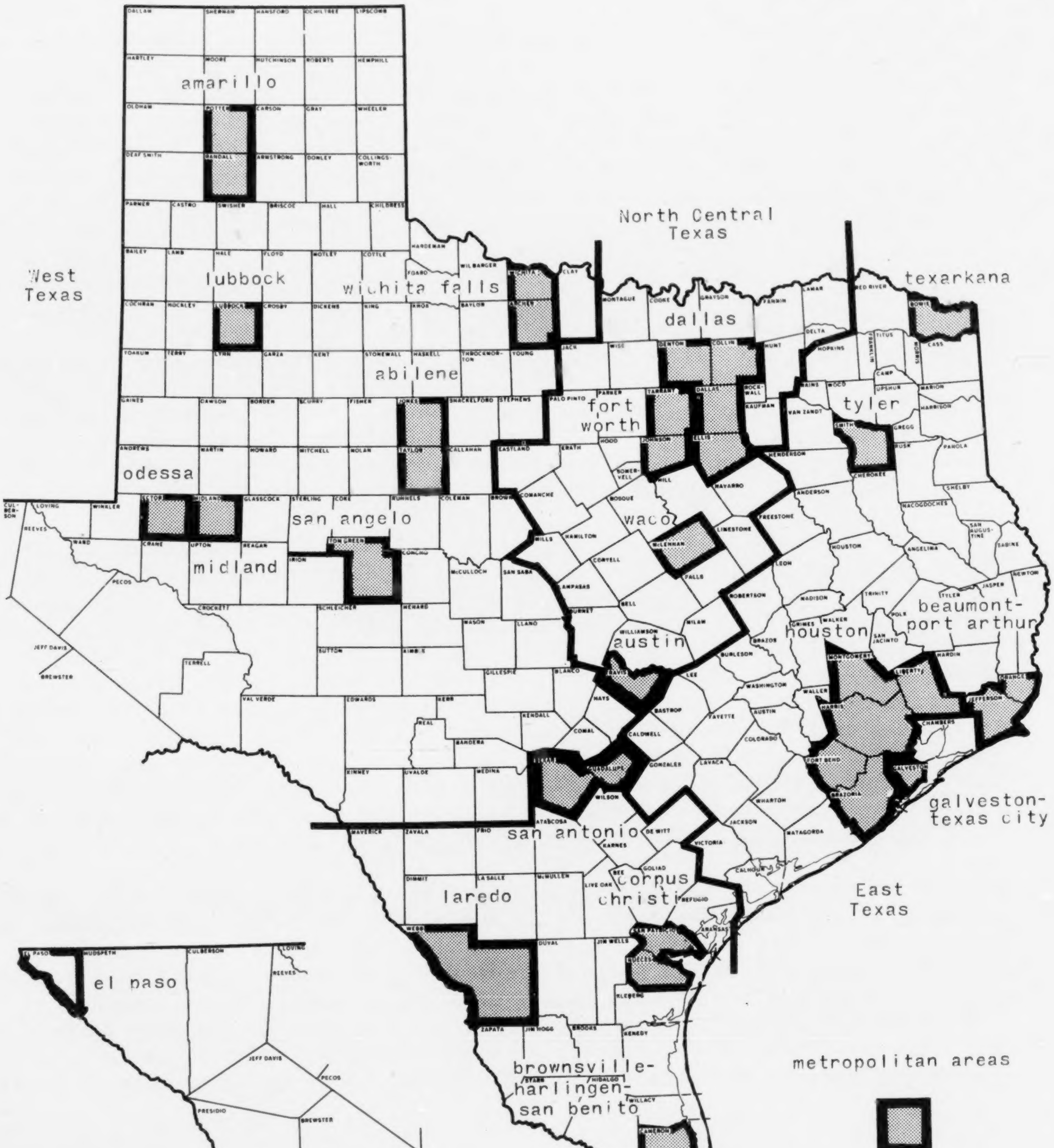
Area	Number of dentists
All counties	3,610
In metropolitan areas	2,810
Houston	759
Dallas	596
Fort Worth	254
San Antonio	245
Beaumont-Port Arthur	123
Austin	120
Corpus Christi	96
El Paso	93
Amarillo	67
Lubbock	63
Galveston-Texas City	54
Wichita Falls	54
Abilene	53
Waco	51
Tyler	47
San Angelo	31
Odessa	27
Midland	26
Brownsville-Harlingen	23
Texarkana	22
Laredo	6
Nonmetropolitan counties	800

[1] Includes nonresponding dentists.

Dentists are rather sparsely distributed in the nonmetropolitan areas of the state. Altogether the 219 nonmetropolitan counties in Texas have only 22 percent of the state's dentist supply. By comparison, the Houston metropolitan area alone has nearly as many dentists as all of the nonmetropolitan counties combined. There are very few dentists in almost every one of these counties. For example, at least seven in every ten nonmetropolitan counties have fewer than five dentists, including 2 in every ten which apparently have no dentists at all. However, there are a few nonmetropolitan counties which have fairly sizeable numbers of dentists when compared with some counties included in metropolitan areas.

Because of the large number of counties and metropolitan areas in Texas, the state has been divided into four regions to permit a more detailed examination of the geographical distribution of dentists within the state. The regional distribution of civilian dentists responding to the survey was substantially the same as that for all civilian dentists in the state. The map on the following page outlines the boundaries of each of the regions and indicates

REGIONS AND METROPOLITAN AREAS IN TEXAS


amarillo
West Texas
lubbock
wichita falls
North Central Texas
texarkana
dallas
abilene
fort worth
tyler
odessa
san angelo
waco
midland
austin
houston
beaumont-port arthur
galveston-texas city
san antonio
corpus christi
laredo
East Texas
el paso
brownsville-harlingen-san benito
metropolitan areas
South Texas

the metropolitan areas and nonmetropolitan counties contained in each. Regional variations in dentist supply and selected dentist characteristics are presented tabularly in Appendix Table B and are discussed on the following pages. Similar data for individual counties are presented in Appendix Table C.

When the geographical distribution of dentists in Texas is viewed regionally it becomes apparent that the dentists are concentrated in the more populous regions of East and North Central Texas. Sixty-nine percent of the state's dentists are located in the 105 counties which make up these two regions--56 percent in the 9 metropolitan areas and 13 percent in the 87 nonmetropolitan counties. The other 31 percent of the state's dentists are located in one of the 149 counties which make up West or South Texas--22 percent in the 12 metropolitan areas and only 9 percent in the 132 nonmetropolitan counties.

Primarily because of the concentration of dentists in the Houston metropolitan area, East Texas has the largest share, 36 percent, of the state's dentist supply. In addition to the Houston area, the Beaumont-Port Arthur, Galveston-Texas City, Tyler and Texarkana areas are also included in East Texas and these four areas together contain 7 percent of the total dentist supply. The region's 56 nonmetropolitan counties, about one-fourth of all the counties so classified, contain another 8 percent of the state's dentists. One-half of the region's nonmetropolitan counties have five or more dentists. Gregg County has the largest nonmetropolitan dental force in the region.

The location of the Dallas and Fort Worth metropolitan areas in North Central Texas contributes to the substantial number of dentists in this region, which has the second largest dentist supply in the state. One-third of the state's dentists are located in this region, including 23 percent who are located in either the Dallas or Fort Worth area. Another five percent of the state's dentists are in the Austin and Waco metropolitan areas. Even though only 31 of the state's 219 nonmetropolitan counties are included in North Central Texas, the dentists located in these counties account for another 5 percent of the total dentist supply. Almost one-half of these counties have five or more dentists, including Bell and Grayson counties which have dental forces larger than either Collin, Denton or Ellis counties in the Dallas metropolitan area, or Johnson County in the Fort Worth area.

Another 19 percent of the state's dentists are located in West Texas. By far the majority of these dentists are in one of the region's eight metropolitan areas. The El Paso area has the largest number of dentists. The Amarillo, Lubbock, Wichita Falls and Abilene areas each have substantially more dentists than do either the San Angelo, Odessa or Midland areas. Almost one-half (107 counties) of the state's nonmetropolitan counties are in West Texas, but over two-thirds of the state's 46 nonmetropolitan counties which apparently have no dentists are in this region. However, there are in total a relatively large number of dentists in the region's 76 nonmetropolitan counties which have dentists and these account for 7 percent of the state's total dentist supply. Nevertheless, only 13 of these nonmetropolitan counties have as many as 5 dentists.

South Texas has the smallest share, only 12 percent, of the state's supply of dentists. Over one-half of the region's dentists are located in the San Antonio area. The Corpus Christi area also has a substantial number of dentists as compared with the Brownsville-Harlingen-San Benito area. The Laredo area, which has fewer dentists than any of the other metropolitan areas in the state, is also located in this region. Only four of the region's 25 nonmetropolitan counties have as many as 5 dentists, including Hidalgo County which has the largest supply of dentists. (Since the tabulation of these survey data Hidalgo County has been designated the McAllen-Pharr-Edinburg metropolitan area.)

About 8 percent of the dentists who responded to the survey reported that they maintain a second office location. Of these dentists, about 4 out of 10 maintain their second office in a county different from the one in which their primary office is located. Almost one-half of the reported second offices are located in one of the four largest metropolitan areas--Houston, Dallas, Fort Worth and San Antonio.

Geographical differences in age.--On the average dentists in the metropolitan areas of Texas are slightly younger than those located in nonmetropolitan counties. There are marked differences in the average ages of dentists in each of the 21 metropolitan areas. The Amarillo area has the youngest dentists. Their median age is 40.0 years, compared to the state average of 43.0 (Table 7). Almost one-third of the dentists in this area are under 35 years old (Appendix Table B). The average dentist in three of the four largest metropolitan areas--Dallas, Fort Worth and Houston--is also younger than the average dentist in the state. At the other extreme, dentists in the San Angelo area are the oldest, with a median age of 49.2 years, and only 19 percent under 35. The median age of dentists in the Laredo and Waco areas also considerably exceeds that of the state as a whole.

Table 7.--Median Age by Metropolitan Area1/

Area	Median age
All counties	43.0
In metropolitan areas	42.6
Amarillo	40.0
Midland	41.0
Dallas	41.6
Brownsville-Harlingen	41.7
Odessa	41.8
Fort Worth	42.1
Houston	42.2
Beaumont-Port Arthur	43.1
Lubbock	43.1
Texarkana	43.1
Abilene	43.2
Austin	43.4
Tyler	43.6
El Paso	43.7
San Antonio	43.8
Wichita Falls	43.9
Galveston-Texas City	44.4
Corpus Christi	44.5
Laredo	45.0
Waco	45.0
San Angelo	49.2
Nonmetropolitan counties	44.3

1/ Includes data obtainable for nonresponding dentists.

East and North Central Texas not only have disproportionately large shares of the dentist supply, but they also have the youngest dentists. The median ages in 1965 of dentists located in these two regions were 42.6 and 42.5 years, respectively. Dentists in West Texas were on the average a full year older--43.6--and those in South Texas approximately two years older--44.4. Twenty-five percent of the dentists in East Texas were under 35 years of age, while only 22 percent were 55 or older. On the other hand, in South Texas only 21 percent were under 35, and 27 percent had reached the age of 55. Within each of the four regions, dentists located in the nonmetropolitan counties were on the average older than those in metropolitan areas. This difference was most pronounced among dentists in South and North Central Texas.

Professional status.--Nearly all (96 percent) of the dentists in Texas are known to be active in their profession. One percent either reported themselves retired or engaged in nondental employment, or in the case of nonrespondents were classified as professionally inactive on the basis of information available to the State Board. The professional status was not obtainable for the remaining 3 percent of the dentists (28 respondents and 94 nonrespondents). However, since there are indications that the percentage of older dentists is relatively high among the nonrespondents, this group may include a proportionately greater number of retirees than the respondents.

Almost all of the dentists who are known to be retired are in the older age groups. Even so, relatively few of the 292 dentists 65 years old and over, for whom professional status was obtainable, were retired. Of these dentists only 5 percent considered themselves as fully retired. Among those 75 and over, 90 percent are still active in the profession.

Active dentists in relation to population.--There was one professionally active dentist for every 3,034 persons in Texas in 1965, based on the count of dentists who are known to be active in the state (Table 8). In general, the dentist supply in relation to the population is more favorable in the metropolitan areas of the state than in the nonmetropolitan areas. On the average, there are 2,668 persons for every active dentist in the metropolitan areas as compared with an average ratio of 4,321 for nonmetropolitan counties.

Table 8.--Persons per Dentist by Metropolitan Area[1/]

Area	Persons per dentist
All counties	3,034
In metropolitan areas	2,668
Tyler	1,955
Austin	2,083
Dallas	2,287
San Angelo	2,303
Houston	2,315
Fort Worth	2,616
Abilene	2,680
Wichita Falls	2,712
Beaumont-Port Arthur	2,751
Lubbock	2,921
Midland	2,946
Galveston-Texas City	2,996
Corpus Christi	3,004
Amarillo	3,013
Texarkana	3,130
Waco	3,180
San Antonio	3,423
Odessa	3,522
El Paso	3,863
Brownsville-Harlingen	6,796
Laredo	11,350
Nonmetropolitan counties	4,321

1/ Includes data obtainable for nonresponding dentists.

The persons-per-dentist ratios for individual metropolitan areas and nonmetropolitan counties differ sharply. In the 21 metropolitan areas these ratios range from 1,955 in the Tyler area to a high 11,350 in the Laredo area. Even so, 14 of the 21 areas have ratios more favorable than the state average of 3,034. Among the nonmetropolitan counties which are known to have active dentists, the persons-per-dentist ratios range from a very favorable 1,750 in Shackelford County in West Texas to a most unfavorable 16,900 in South Texas' Maverick County. Only 30 of the 171 nonmetropolitan counties with active dentists have fewer than 3,000 persons per dentist.

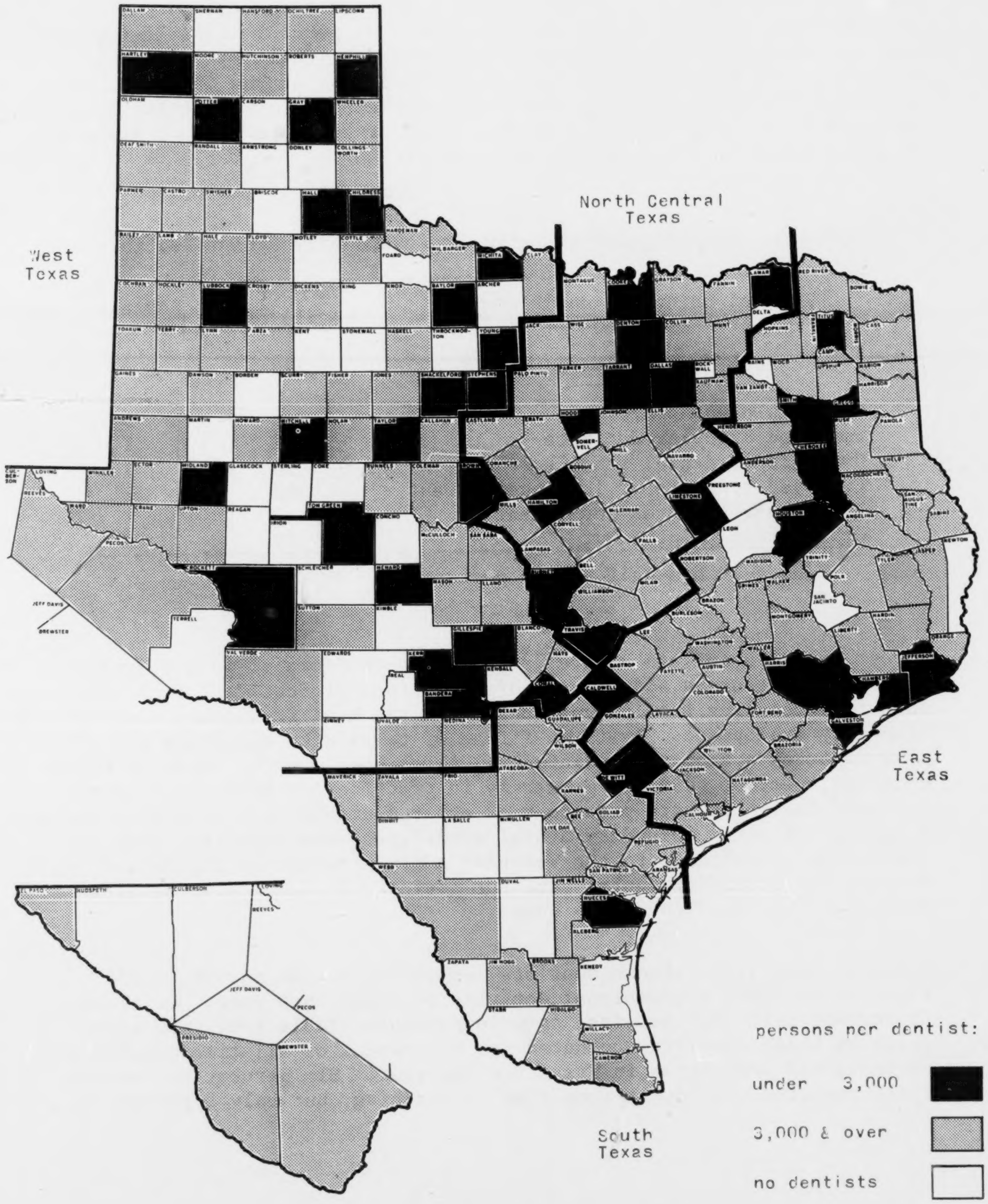
Not only are the majority of the state's dentists located in East and North Central Texas, but there are also, on the average, more dentists in relation to the population in these two regions than in either West or South Texas. East and North Central Texas, which have almost the same number of dentists, average almost the same number of persons in the population per active dentist--2,726 and 2,643, respectively. For every active dentist in West Texas there are about 3,542 persons. South Texas with 4,236 persons per dentist has the least favorable regional ratio.

To varying degrees within each of the four regions the persons in metropolitan areas are served by relatively more dentists than are those in the nonmetropolitan counties. For example, in West Texas there are, on the average, 3,091 persons per dentist in the metropolitan areas as compared with a ratio of 4,312 for the nonmetropolitan counties, a difference of only 1,221 persons per dentist (Appendix Table B). The difference between the metropolitan and nonmetropolitan ratios is not too much greater in East and North Central Texas--1,379 and 1,694, respectively. However, in South Texas there are 3,345 more persons for each active dentist in the nonmetropolitan counties than in the metropolitan areas.

There is also considerable variation among the regions in the proportion of individual counties which have favorable persons-per-active dentist ratios. If the state ratio of 3,034 is used as a standard for determining the favorability of the ratio for each Texas county, 45 of the 254 counties in the state have relatively favorable ratios, that is, less than 3,000 persons per active dentist. In addition to these 45 counties, the map on the following page also identifies the 160 counties with less favorable ratios, as well as the 49 counties which, according to available information, have no active dentists.

Among the four regions North Central Texas has the highest proportion of counties (26 percent) with less than 3,000 persons per dentist. One-half of this region's metropolitan counties have favorable ratios. However, only two counties, Dallas and Denton, in the 4-county Dallas metropolitan area and only Tarrant County in the 2-county Fort Worth area are in this category. West Texas and East Texas have about the same proportion of counties with favorable ratios, 19 and 15 percent respectively. Only 4 of the 10 counties in East Texas' metropolitan areas are included in this group. Of the 5 counties in the Houston area of East Texas only Harris County has fewer than 3,000 persons per dentist. In West Texas 6 of the 11 metropolitan counties and 17 of the 107 nonmetropolitan counties are included in the group of counties with favorable ratios. Only 2 of the 31 South Texas counties have persons-per-active dentist ratios more favorable than the state average.

POPULATION PER DENTIST IN TEXAS
BY COUNTY: 1965


West Texas
North Central Texas
East Texas
South Texas
persons per dentist:
under 3,000 ■
3,000 & over ▨
no dentists ☐

Professional Activity

Current employment.--Of the 2,473 responding dentists who reported that they were professionally active at the time of the survey, 96 percent are primarily engaged in private practice: 95 percent are self-employed and one percent are employed by another dentist (Table 9). Another one percent of the state's dentists are on the staffs of the dental schools at Baylor University and the University of Texas. The remaining 3 percent are either employed by Federal, state or local government agencies, or are engaged in other dental employment.

Table 9.--Current Employment of Professionally Active Dentists

Type of principal employment	Number employed	Percent
Total	2,473	100
Self-employed	2,342	95
Employed by other dentists	21	1
On staff of dental schools	34	1
Employed by state or local government	22	1
Employed by Federal Government	7	*
Other dental employment	47	2

* Less than one-half of one percent.

Almost one in every ten active dentists reported one or more secondary dental activities in addition to his principal professional employment. Part-time teaching in a dental school was the most frequently reported secondary employment. Over two-fifths of those with secondary employment reported a faculty appointment. About one in every seven of these dentists, most of whom are primarily in practice for themselves, are employed in the private practices of other dentists on a part-time basis. A variety of other secondary dental activities were reported, such as serving as consultants to the Veterans Administration or the Armed Forces, and providing dental care for patients in hospitals, handicapped persons or children in orphan homes.

Activity last year.--Among dentists responding to the survey, 2,331 reported on their professional activity in Texas last year. Of these, 98 percent said they provided care to patients (Table 10). The time spent by these dentists accounted for 95 percent of all time devoted to professional activities in Texas for the year. Six percent of the dentists reported they spent some time in teaching, but only 2 percent of total professional time was spent at this activity. While 2 percent of the dentists were engaged in research activities and 3 percent spent time in some other dental activity, such as taking additional training, only 3 percent of the total reported professional time was spent in these two types of activities.

Table 10.--Professional Activity Last Year

Type of activity	Dentists reporting activity last year: Number	Dentists reporting activity last year: Percent	Percent of total professional time
Total	2,331[1]	100[1]	100
Patient care	2,276	98	95
Teaching	135	6	2
Research	38	2	1
Other	73	3	2

[1] Individual items add to more than total because some dentists spent time in more than one activity.

Dentists reporting on time spent last year in providing patient care devoted an average of 47.8 weeks to this activity and worked an average of 40.6 hours per week. Three-fifths of these dentists spent 40 hours or more a week at this activity for at least 48 weeks of the year (Table 11). Only 16 percent devoted under 35 hours per week or worked less than 40 weeks at this activity during the course of the year. Exceptionally long hours were devoted to the treatment of patients by 15 percent of the dentists, who spent the equivalent of 8 hours a day, 6 days a week at this activity for 48 weeks or more during the year.

Table 11.--Time Spent in Patient Care Last Year

Weeks spent in patient care	Percent of dentists providing care	Percent distribution by work week: 48 hours or more	41-47 hours	40 hours	35-39 hours	Under 35 hrs.
Total reporting time spent	100	17	20	34	17	12
50 weeks or more	52	11	11	18	7	5
48 - 49 weeks	29	4	6	10	6	3
40 - 47 weeks	14	1	2	5	3	3
Less than 40 weeks	5	1	1	1	1	1

Practice Characteristics

Limited practices.--Dentists reporting that they limit their practices to a dental specialty number 372, or approximately 16 percent of the respondents. Over two-thirds of these dentists reported limiting their practices to one of two specialty areas--43 percent in orthodontics and 25 percent in oral surgery.

More than 9 of every 10 dentists who reported that their practices are limited are located in one of the state's metropolitan areas. Nineteen percent of the dentists in the metropolitan areas reported limited practices, whereas only 6 percent of the dentists in the nonmetropolitan counties limit their practices. Among the metropolitan areas, Lubbock and Wichita Falls have the largest proportions of practitioners with limited practices. One quarter of the dentists in these areas reported limiting their practices. Even though proportionately fewer dentists in the four largest metropolitan areas are specialists, there are large numbers of specialists in the Houston Dallas, Fort Worth and San Antonio areas.

Use of auxiliaries.--About 89 percent of the dental practitioners in Texas (i.e., responding dentists who reported they spend any time working at the chair) say that they employ auxiliary personnel (Table 12). The vast majority, 83 percent, of the practitioners employ at least one auxiliary full time, while only 6 percent employ part-time auxiliaries exclusively. Of the various types of personnel, dental assistants are those most frequently employed. Approximately 84 percent of the practitioners employ an assistant, including 78 percent who use one full time. Almost one-third of all practitioners employ secretaries or receptionists, and the majority employ at least one on a full-time basis. Dental hygienists and laboratory technicians are much less frequently utilized by dentists in Texas, and they are more likely to be employed on a part-time basis than are assistants and secretaries.

Table 12.--Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With only part-time personnel	With one full-time employee (or more)
Total	2,467	100	6	83
With no auxiliary	273	11	-	-
With one or more auxiliaries	2,194	89	6	83
With assistant	2,079	84	6	78
With hygienist	357	14	7	7
With laboratory technician	217	9	6	3
With secretary or receptionist	777	31	8	23
With other type of personnel	101	4	2	2

The use of auxiliaries varies with the age of the dentist (Table 13). Well over 90 percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. Among dentists 65 years old and over, the proportion using auxiliaries drops to 60 percent. Dental practitioners reach peak utilization of assistants between the ages of 30 and 44, but they are between the ages of 35 and 54 before maximum utilization of hygienists is attained.

Table 13.--Dental Practitioners Employing Auxiliaries, by Age

Age	Percent of age group		
	With auxiliaries	With assistants	With hygienists
Under 30	86	84	8
30 - 34	95	91	13
35 - 44	95	92	17
45 - 54	91	87	16
55 - 64	79	69	14
65 & over	60	49	7

Dentists in metropolitan areas employ auxiliaries only slightly more frequently than do those in nonmetropolitan counties. On the average, 90 percent of the dental practitioners in the metropolitan areas employ some type of auxiliary personnel. Moreover, in each of the individual 21 metropolitan areas at least four-fifths of the dentists utilize auxiliaries. On the average, 86 percent of the practitioners in the nonmetropolitan counties utilize auxiliaries. In most of the individual nonmetropolitan counties the employment of dental auxiliaries is quite frequent.

Practitioners in metropolitan areas and in nonmetropolitan counties employ assistants and laboratory technicians at about the same rate. In metropolitan areas 85 percent of the dentists employ assistants and 9 percent employ technicians, while in nonmetropolitan counties 81 percent employ assistants and 7 percent employ technicians. The most pronounced difference is in the utilization of hygienists--16 percent of the practitioners in the metropolitan areas employ these auxiliaries, compared to only 8 percent of the dentists located in nonmetropolitan counties.

About 14 percent of the responding dentists in Texas reported one or more vacant positions for auxiliary personnel. Of those reporting vacancies, about 35 percent indicated a need for full-time hygienists and 33 percent stated a desire for full-time dental assistants. Nine of every 10 dentists reporting a vacancy already employ an auxiliary.

Weeks and hours worked.--Although 88 percent of all responding dentists who were in private practice reported on the amount of time they had spent in their practices in the previous year, the percentage reporting is low for dentists 55 years old and over. Since those not responding are likely to be those who are least active, the estimates on time worked by dentists in this age group are probably high. Even so, the figures in Table 14 demonstrate the greatly reduced activity among older dentists. Thus, about 64 percent of the dentists under 45 report working at least 48 weeks and at least 40 hours per week. In comparison 52 percent of the dentists between 55 and 64, and only 35 percent of those 65 and over, report working this amount of time.

Table 14.--Time Spent in Private Practice Last Year, by Age

Age	Dentists reporting time spent in practice		Percent working	
	Number	Percent of total	48 weeks or more 40 hrs/wk or more	Part year or less than 40 hrs/wk
Total	1,952	88	60	40
Under 35	459	93	63	37
35 - 44	738	92	65	35
45 - 54	394	89	58	42
55 - 64	219	83	52	48
65 & over	94	64	35	65

Out-of-state Civilian Dentists

Texas licenses are maintained by at least 227 civilian dentists located in 33 states, the District of Columbia, and in foreign countries. Thirty-five percent of these out-of-state dentists are located in the four adjacent states, primarily in Oklahoma (Table 15). Missouri, California, and Illinois are the only more distant states in which more than 10 of the out-of-state dentists are currently located. Approximately 43 percent of the out-of-state dentists are graduates of Baylor University or the University of Texas.

Table 15.--Out-of-State Civilian Dentists, by Present Location[1]

Present location	Number of dentists	Percent of dentists
Total	227	100
Adjacent states	80	35
Oklahoma	42	19
New Mexico	16	7
Louisiana	12	5
Arkansas	10	4
Nonadjacent states	147	65
Missouri	14	6
California	13	6
Illinois	12	5
Ohio	10	4
26 other states and abroad	98	44

1/ Includes nonresponding dentists.

The out-of-state dentists are younger than those presently in Texas. While only 25 percent of the dentists located in Texas were under 35 years of age in 1965, 37 percent of the out-of-state dentists were in this young age group. Furthermore, only 16 percent of the out-of-state dentists were 55 years old or over, as compared with 23 percent of the in-state dentists.

Of the 227 out-of-state dentists, 154, or 68 percent, responded to the survey. Ninety-eight percent of these respondents reported that they are professionally active. The majority, 80 percent, are in private practice. About 9 percent are employed by governmental agencies, 3 percent are on the staffs of dental schools and the remaining 6 percent are engaged in other dental activities, such as taking advanced training.

About one of every five out-of-state respondents reported they had formerly been professionally active in Texas immediately prior to assuming their present location in another state. Almost one-third of the 32 reporting out-migrant dentists are now located in one of the four adjacent states--Arkansas, Louisiana, Oklahoma and New Mexico--and the remaining two-thirds are scattered in 16 other states across the Nation.

Appendix Table A.--Summary Statistics for Texas

	Total dentists	Responding dentists	Nonresponding dentists
Total dentists licensed in Texas	4,180	2,923	1,257[1]
Civilian dentists in Texas[2] (designated simply as "dentists" in text tables)	3,610	2,518	1,092
Professionally active dentists[3]	3,454	2,473	981
Dental practitioners[4]	-	2,467	-
In limited practice[5]	-	372	-
Located in Texas last year:			
Reported professional activity[6]	-	2,331	-
Dentists providing patient care[7]	-	2,276	-
Reported time spent in patient care[8]	-	2,022	-
Dentists in private practice[9]	-	2,212	-
Reported time spent in practice[10]	-	1,952	-
Civilian dentists in another State	227	154	73
Dentists on active duty in Armed Forces	279	187	92

1/ Data for nonresponding dentists were obtained from the Texas State Board of Dental Examiners, and from the 1965 American Dental Directory published by the American Dental Association.

2/ All dentists who currently work in Texas (excluding those in the Armed Forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 122, age - 185, dental school attended - 65.

3/ All active civilian dentists currently in Texas--excludes 25 dentists who are fully retired, 9 who are engaged principally in a nondental activity, and 122 whose principal current activity is unknown.

4/ All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

5/ Dentists who reported they limited their practice to a dental specialty.

6/ Dentists located in Texas last year who indicated type(s) of activity in which they engaged.

7/ All responding dentists who engaged in patient care last year, either as a primary or secondary activity.

8/ Dentists reporting both hours and weeks spent in patient care last year.

9/ Dentists who reported they were primarily self-employed both currently and last year.

10/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.

Appendix Table B.--Selected Data for Metropolitan Areas, by Region

Region and metropolitan area	Number of counties	Civilian dentists 1/ Number	Civilian dentists 1/ Percent	Percent distribution by age Under 35	35-44	45-54	55-64	65 & over	Professionally active dentists 1/	Persons per active dentist
All counties	254	3,610	100	24	33	20	14	9	3,454	3,034
East Texas	66	1,306	36	25	33	20	13	9	1,242	2,726
Metropolitan areas	10	1,005	28	25	34	21	12	8	955	2,407
Houston	5	759	21	25	34	20	13	8	714	2,315
Beaumont-Port Arthur	2	123	3	21	37	19	12	11	121	2,751
Galveston-Texas City	1	54	2	24	29	27	10	10	53	2,996
Tyler	1	47	1	29	26	13	16	16	47	1,955
Texarkana	1	22	1	33	24	38	5	-	20	3,130
Nonmetropolitan counties	56	301	8	27	29	18	16	10	287	3,786
North Central Texas	39	1,200	33	24	35	19	13	9	1,153	2,643
Metropolitan areas	8	1,021	28	25	35	19	13	8	981	2,390
Dallas	4	596	16	27	37	19	11	6	573	2,287
Fort Worth	2	254	7	23	36	17	13	11	243	2,616
Austin	1	120	3	27	27	23	16	7	115	2,083
Waco	1	51	2	16	34	24	20	6	50	3,180
Nonmetropolitan counties	31	179	5	16	36	18	16	14	172	4,084
South Texas	31	444	12	21	32	20	16	11	428	4,236
Metropolitan areas	6	370	10	21	33	20	15	11	355	3,666
San Antonio	2	245	7	22	33	18	14	13	233	3,423
Corpus Christi	2	96	2	18	34	26	14	8	93	3,004
Brownsville-Harlingen-San Benito	1	23	1	27	32	18	23	-	23	6,796
Laredo	1	6	*	34	17	17	16	16	6	11,350
Nonmetropolitan counties	25	74	2	18	25	20	23	14	73	7,011

Appendix Table B.--Selected Data for Metropolitan Areas, by Region (continued)

Region and metropolitan area	Number of counties	Civilian dentists1/		Percent distribution by age					Professionally active dentists1/	Persons per active dentist
		Number	Percent	Under 35	35-44	45-54	55-64	65 & over		
West Texas	118	660	19	24	31	20	15	10	631	3,542
Metropolitan areas	11	414	12	23	35	20	11	11	398	3,091
El Paso	1	93	3	19	36	19	12	14	92	3,863
Amarillo	2	67	2	31	35	20	6	8	61	3,013
Lubbock	1	63	2	28	31	29	6	6	62	2,921
Wichita Falls	2	54	1	25	31	18	16	10	52	2,712
Abilene	2	53	1	16	38	16	14	16	50	2,680
Odessa	1	27	1	20	48	28	-	4	27	3,522
Midland	1	26	1	21	46	21	8	4	24	2,946
San Angelo	1	31	1	19	23	13	26	19	30	2,303
Nonmetropolitan counties	107	246	7	24	26	20	20	10	233	4,312

* Less than one-half of one percent.

1/ Includes respondents and nonrespondents.

Appendix Table C.--County Data by Region and Metropolitan Area

Region, metropolitan area and county	Civilian dentists1/			Professionally active dentists			Population2/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Total	Respondents	Non-respondents		
Total	3,610	2,518	1,092	3,454	2,473	981	10,480.9	3,034
East Texas	1,306	863	443	1,242	849	393	3,385.5	2,726
Metropolitan counties								
Houston area								
Brazoria	29	21	8	27	20	7	91.1	3,374
Fort Bend	7	5	2	7	5	2	45.3	6,471
Harris	705	459	246	664	453	211	1,451.6	2,186
Liberty	9	6	3	8	6	2	34.0	4,250
Montgomery	9	8	1	8	7	1	30.8	3,850
Beaumont-Port Arthur area								
Jefferson	105	71	34	103	70	33	267.7	2,599
Orange	18	9	9	18	9	9	65.2	3,622
Galveston-Texas City area								
Galveston	54	34	20	53	33	20	158.8	2,996
Tyler area								
Smith	47	30	17	47	30	17	91.9	1,955
Texarkana area								
Bowie	22	15	7	20	15	5	62.6	3,130
Nonmetropolitan counties								
Anderson	7	4	3	7	4	3	28.4	4,057
Angelina	13	9	4	13	9	4	42.4	3,262
Austin	4	3	1	4	3	1	13.3	3,325
Bastrop	2	2	-	2	2	-	15.8	7,900
Brazos	15	15	-	15	15	-	48.2	3,213

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists[1]			Professionally active dentists			Population[2] (in 000's)	Persons per active dentist
	Total	Respon-dents	Non respon-dents	Total	Respon-dents	Non-respon-dents		
East Texas (cont'd.)								
Nonmetropolitan counties (cont'd.)								
Burleson	3	3	-	2	2	-	10.4	5,200
Caldwell	6	4	2	6	4	2	16.1	2,683
Calhoun	5	4	1	5	4	1	20.0	4,000
Camp	2	2	-	2	2	-	7.4	3,700
Cass	5	5	-	5	5	-	21.9	4,380
Chambers	6	5	1	6	5	1	11.5	1,917
Cherokee	13	6	7	11	6	5	30.7	2,791
Colorado	5	3	2	3	2	1	18.8	6,267
Fayette	3	2	1	3	2	1	18.8	6,267
Franklin	1	-	1	1	-	1	4.5	4,500
Freestone	-	-	-	-	-	-	11.2	-
Gonzales	4	4	-	4	4	-	16.3	4,075
Gregg	38	22	16	38	22	16	75.4	1,984
Grimes	3	2	1	2	2	-	11.6	5,800
Hardin	5	1	4	5	1	4	28.0	5,600
Harrison	11	8	3	10	8	2	45.4	4,540
Henderson	7	5	2	7	5	2	23.3	3,329
Hopkins	5	3	2	5	3	2	18.0	3,600
Houston	7	3	4	6	2	4	17.8	2,967
Jackson	5	3	2	4	3	1	14.5	3,625
Jasper	6	2	4	6	2	4	23.1	3,850
Lavaca	5	1	4	5	1	4	19.2	3,840
Lee	2	2	-	2	2	-	8.3	4,150
Leon	-	-	-	-	-	-	9.0	-
Madison	2	1	1	2	1	1	6.1	3,050

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists 1/			Professionally active dentists			Population 2/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Total	Respondents	Non-respondents		
East Texas (cont'd.)								
Nonmetropolitan counties (cont'd.)								
Marion	1	-	1	1	-	1	7.0	7,000
Matagorda	7	7	-	7	7	-	27.8	3,971
Morris	2	2	-	2	2	-	12.1	6,050
Nacogdoches	9	7	2	9	7	2	28.0	3,111
Newton	-	-	-	-	-	-	10.2	-
Panola	4	3	1	3	3	-	15.7	5,233
Polk	4	2	2	4	2	2	13.8	3,450
Rains	-	-	-	-	-	-	2.3	-
Red River	2	1	1	2	1	1	14.1	7,050
Robertson	3	2	1	3	2	1	14.5	4,833
Rusk	7	6	1	7	6	1	34.2	4,886
Sabine	1	1	-	1	1	-	6.7	6,700
San Augustine	2	2	-	2	2	-	7.2	3,600
San Jacinto	-	-	-	-	-	-	5.6	-
Shelby	5	3	2	4	3	1	19.2	4,800
Titus	7	6	1	7	6	1	16.7	2,386
Trinity	1	-	1	1	-	1	6.4	6,400
Tyler	2	2	-	2	2	-	10.2	5,100
Upshur	6	4	2	6	4	2	19.4	3,233
Van Zandt	4	2	2	3	1	2	17.4	5,800
Victoria	17	13	4	17	13	4	53.6	3,153
Walker	5	5	-	5	5	-	22.6	4,520
Waller	1	1	-	1	1	-	13.1	13,100
Washington	7	3	4	6	3	3	18.4	3,067
Wharton	10	7	3	9	7	2	38.9	4,322
Wood	4	2	2	4	2	2	16.0	4,000

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists1/			Professionally active dentists			Population2/ (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Total	Respondents	Nonrespondents		
North Central Texas	1,200	877	323	1,153	864	289	3,047.2	2,643
Metropolitan counties								
Dallas area								
Collin	16	9	7	14	9	5	44.1	3,150
Dallas	551	386	165	531	383	148	1,166.0	2,196
Denton	19	15	4	19	15	4	55.9	2,942
Ellis	10	10	-	9	9	-	44.6	4,956
Fort Worth area								
Johnson	9	7	2	8	6	2	38.0	4,750
Tarrant	245	179	66	235	177	58	597.7	2,543
Austin area								
Travis	120	89	31	115	88	27	239.5	2,083
Waco area								
McLennan	51	41	10	50	40	10	159.0	3,180
Nonmetropolitan counties								
Bell	23	19	4	21	17	4	111.9	5,329
Bosque	3	3	-	3	3	-	10.3	3,433
Burnet	3	3	-	3	3	-	8.7	2,900
Comanche	2	2	-	2	2	-	12.3	6,150
Cooke	9	6	3	8	5	3	23.9	2,988
Coryell	3	3	-	3	3	-	35.6	11,867
Delta	-	-	-	-	-	-	4.7	-
Eastland	3	1	2	3	1	2	17.6	5,867
Erath	5	3	2	5	3	2	15.3	3,060
Falls	4	4	-	4	4	-	19.1	4,775
Fannin	3	3	-	3	3	-	20.8	6,933
Grayson	23	17	6	22	17	5	75.0	3,409

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists[1/]			Professionally active dentists			Population[2/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Total	Respondents	Non-respondents		
North Central Texas (cont'd.)								
Nonmetropolitan counties (cont'd.)								
Hamilton	4	3	1	4	3	1	7.4	1,850
Hill	6	4	2	6	4	2	20.5	3,417
Hood	2	1	1	2	1	1	5.5	2,750
Hunt	12	9	3	12	9	3	39.1	3,258
Jack	1	1	-	1	1	-	7.2	7,200
Kaufman	7	7	-	7	7	-	29.5	4,214
Lamar	13	10	3	12	10	2	32.8	2,733
Lampasas	2	1	1	2	1	1	9.3	4,650
Limestone	8	6	2	8	6	2	18.3	2,288
Milam	5	4	1	5	4	1	20.7	4,140
Mills	1	1	-	1	1	-	3.7	3,700
Montague	4	3	1	4	3	1	13.8	3,450
Navarro	7	5	2	6	4	2	34.1	5,683
Palo Pinto	6	4	2	6	4	2	21.1	3,517
Parker	6	5	1	5	5	-	23.3	4,660
Rockwall	-	-	-	-	-	-	5.7	-
Somervell	-	-	-	-	-	-	2.6	-
Williamson	10	10	-	10	10	-	35.2	3,520
Wise	4	3	1	4	3	1	17.4	4,350
South Texas	444	303	141	428	294	134	1,813.2	4,236
Metropolitan counties								
San Antonio area								
Bexar	235	159	76	223	153	70	766.6	3,438
Guadalupe	10	7	3	10	7	3	31.0	3,100

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists[1]			Professionally active dentists			Population[2] (in 000's)	Persons per active dentist
	Total	Respon-dents	Non-respon-dents	Total	Respon-dents	Non-respon-dents		
South Texas (cont'd.)								
Metropolitan counties (cont'd.)								
Corpus Christi area								
Nueces	89	62	27	86	60	26	236.1	2,745
San Patricio	7	4	3	7	4	3	43.3	6,186
Brownsville-Harlingen-San Benito area								
Cameron	23	16	7	23	16	7	156.3	6,796
Laredo area								
Webb	6	4	2	6	4	2	68.1	11,350
Nonmetropolitan counties								
Aransas	1	-	1	1	-	1	8.2	8,200
Atascosa	4	2	2	4	2	2	18.2	4,550
Bee	4	4	-	4	4	-	25.2	6,300
Brooks	1	-	1	1	-	1	8.2	8,200
De Witt	7	7	-	7	7	-	19.6	2,800
Dimmit	-	-	-	-	-	-	9.7	-
Duval	-	-	-	-	-	-	12.3	-
Frio	2	1	1	2	1	1	10.0	5,000
Goliad	1	-	1	1	-	1	5.0	5,000
Hidalgo	26	15	11	25	14	11	196.9	7,876
Jim Hogg	1	1	-	1	1	-	4.9	4,900
Jim Wells	6	5	1	6	5	1	38.2	6,367
Karnes	3	3	-	3	3	-	13.9	4,633
Kenedy	-	-	-	-	-	-	0.9	-
Kleberg	8	8	-	8	8	-	31.3	3,913

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists[1/]			Professionally active dentists			Population[2/] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Total	Respondents	Nonrespondents		
South Texas (cont'd.)								
Nonmetropolitan counties (cont'd.)								
La Salle	-	-	-	-	-	-	5.3	-
Live Oak	1	1	-	1	1	-	7.2	7,200
McMullen	-	-	-	-	-	-	1.0	-
Maverick	1	-	1	1	-	1	16.9	16,900
Refugio	2	1	1	2	1	1	11.3	5,650
Starr	-	-	-	-	-	-	18.6	-
Willacy	2	2	-	2	2	-	18.7	9,350
Wilson	2	1	1	2	1	1	12.6	6,300
Zapata	-	-	-	-	-	-	4.4	-
Zavala	2	-	2	2	-	2	13.3	6,650
West Texas								
Metropolitan counties								
El Paso area								
El Paso	93	67	26	92	67	25	355.4	3,863
Amarillo area								
Potter	59	42	17	53	39	14	134.3	2,534
Randall	8	8	-	8	8	-	49.5	6,188
Lubbock area								
Lubbock	63	40	23	62	40	22	181.1	2,921
Wichita Falls area								
Archer	-	-	-	-	-	-	5.7	-
Wichita	54	46	8	52	45	7	135.3	2,602
Abilene area								
Jones	5	3	2	4	2	2	18.1	4,525
Taylor	48	35	13	46	33	13	115.9	2,520

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists[1]			Professionally active dentists			Population[2] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Total	Respondents	Nonrespondents		
West Texas (cont'd.)								
Metropolitan counties								
Odessa area								
Ector	27	19	8	27	19	8	95.1	3,522
Midland area								
Midland	26	14	12	24	14	10	70.7	2,946
San Angelo area								
Tom Greene	31	24	7	30	23	7	69.1	2,303
Nonmetropolitan counties								
Andrews	2	2	-	2	2	-	13.5	6,750
Armstrong	-	-	-	-	-	-	1.8	-
Bailey	3	1	2	3	1	2	9.8	3,267
Bandera	2	-	2	2	-	2	3.7	1,850
Baylor	2	1	1	2	1	1	5.4	2,700
Blanco	1	1	-	1	1	-	3.5	3,500
Borden	-	-	-	-	-	-	1.1	-
Brewster	1	1	-	1	1	-	6.0	6,000
Briscoe	-	-	-	-	-	-	3.6	-
Brown	9	9	-	9	9	-	24.9	2,767
Callahan	2	1	1	1	1	-	8.3	8,300
Carson	-	-	-	-	-	-	8.1	-
Castro	2	-	2	2	-	2	10.7	5,350
Childress	3	3	-	3	3	-	7.2	2,400
Clay	1	-	1	1	-	1	7.7	7,700
Cochran	1	1	-	1	1	-	7.7	7,700
Coke	-	-	-	-	-	-	3.4	-
Coleman	4	4	-	4	4	-	12.2	3,050

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists[1/]			Professionally active dentists			Population[2/] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Total	Respondents	Non-respondents		
West Texas (cont'd.)								
Nonmetropolitan counties (cont'd.)								
Collingsworth	2	2	-	1	1	-	5.1	5,100
Comal	10	6	4	10	6	4	21.4	2,140
Concho	-	-	-	-	-	-	4.0	-
Cottle	2	-	2	1	-	1	3.4	3,400
Crane	1	1	-	1	1	-	4.5	4,500
Crockett	2	2	-	2	2	-	3.7	1,850
Crosby	2	2	-	2	2	-	10.7	5,350
Culberson	-	-	-	-	-	-	3.3	-
Dallam	2	1	1	1	1	-	5.7	5,700
Dawson	3	3	-	3	3	-	21.3	7,100
Deaf Smith	4	2	2	4	2	2	16.0	4,000
Dickens	1	1	-	1	1	-	4.1	4,100
Donley	-	-	-	-	-	-	3.7	-
Edwards	-	-	-	-	-	-	2.1	-
Fisher	1	-	1	1	-	1	7.0	7,000
Floyd	3	3	-	3	3	-	13.7	4,567
Foard	-	-	-	-	-	-	2.6	-
Gaines	2	2	-	2	2	-	13.7	6,850
Garza	1	1	-	1	1	-	6.7	6,700
Gillespie	4	2	2	4	2	2	9.9	2,475
Glasscock	-	-	-	-	-	-	1.1	-
Gray	15	8	7	13	8	5	34.2	2,631
Hale	11	4	7	11	4	7	42.9	3,900
Hall	2	2	-	2	2	-	5.9	2,950
Hansford	2	2	-	2	2	-	7.2	3,600

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists1/			Professionally active dentists			Population2/ (in 000's)	Persons per active dentist
	Total	Respon-dents	Non-respon-dents	Total	Respon-dents	Non-respon-dents		
West Texas (cont'd.)								
Nonmetropolitan counties (cont'd.)								
Hardeman	1	1	-	1	1	-	7.5	7,500
Hartley	1	1	-	1	1	-	2.3	2,300
Haskell	2	2	-	2	2	-	10.0	5,000
Hays	6	4	2	6	4	2	20.6	3,433
Hemphill	1	1	-	1	1	-	2.7	2,700
Hockley	3	3	-	3	3	-	24.0	8,000
Howard	14	11	3	13	11	2	44.8	3,446
Hudspeth	-	-	-	-	-	-	2.8	-
Hutchinson	9	7	2	9	7	2	35.5	3,944
Irion	-	-	-	-	-	-	1.0	-
Jeff Davis	-	-	-	-	-	-	1.4	-
Kendall	-	-	-	-	-	-	6.1	-
Kent	-	-	-	-	-	-	1.5	-
Kerr	8	4	4	8	4	4	20.4	2,550
Kimble	1	-	1	-	-	-	3.5	-
King	-	-	-	-	-	-	0.5	-
Kinney	-	-	-	-	-	-	2.3	-
Knox	2	2	-	2	2	-	6.7	3,350
Lamb	5	5	-	5	5	-	24.3	4,860
Lipscomb	-	-	-	-	-	-	3.3	-
Llano	1	-	1	1	-	1	5.2	5,200
Loving	-	-	-	-	-	-	0.3	-
Lynn	2	2	-	2	2	-	12.8	6,400
McCulloch	2	2	-	2	2	-	7.7	3,850
Martin	-	-	-	-	-	-	4.9	-

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists[1/]			Professionally active dentists			Population[2/] (in 000's)	Persons per active dentist
	Total	Respon-dents	Non-respon-dents	Total	Respon-dents	Non-respon-dents		
West Texas (cont'd.)								
Nonmetropolitan counties (cont'd.)								
Mason	1	1	-	1	1	-	3.1	3,100
Medina	2	2	-	2	2	-	19.7	9,850
Menard	1	-	1	1	-	1	2.4	2,400
Mitchell	4	2	2	4	2	2	9.9	2,475
Moore	3	3	-	3	3	-	13.5	4,500
Motley	-	-	-	-	-	-	2.3	-
Nolan	7	7	-	6	6	-	18.3	3,050
Ochiltree	3	1	2	3	1	2	11.1	3,700
Oldham	-	-	-	-	-	-	2.0	-
Parmer	1	1	-	1	1	-	11.4	11,400
Pecos	3	3	-	3	3	-	12.9	4,300
Presidio	1	1	-	1	1	-	4.7	4,700
Reagan	-	-	-	-	-	-	3.1	-
Real	-	-	-	-	-	-	1.9	-
Reeves	4	4	-	4	4	-	17.7	4,425
Roberts	1	-	1	-	-	-	1.1	-
Runnels	4	3	1	4	3	1	14.1	3,525
San Saba	2	1	1	2	1	1	7.4	3,700
Schleicher	-	-	-	-	-	-	2.7	-
Scurry	4	4	-	4	4	-	18.7	4,675
Shackelford	2	1	1	2	1	1	3.5	1,750
Sherman	-	-	-	-	-	-	2.7	-
Stephens	3	2	1	3	2	1	8.0	2,667
Sterling	-	-	-	-	-	-	1.1	-
Stonewall	-	-	-	-	-	-	2.7	-

Appendix Table C.--County Data by Region and Metropolitan Area (continued)

Region, metropolitan area and county	Civilian dentists 1/			Professionally active dentists			Population 2/ (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Total	Respondents	Nonrespondents		
West Texas (cont'd.)								
Nonmetropolitan counties (cont'd.)								
Sutton	1	1	-	1	1	-	3.8	3,800
Swisher	3	3	-	3	3	-	11.7	3,900
Terrell	-	-	-	-	-	-	2.4	-
Terry	4	2	2	2	2	-	17.6	8,800
Throckmorton	-	-	-	-	-	-	2.4	-
Upton	1	1	-	1	1	-	5.6	5,600
Uvalde	4	1	3	4	1	3	17.0	4,250
Val Verde	5	5	-	5	5	-	28.0	5,600
Ward	4	4	-	4	4	-	13.6	3,400
Wheeler	1	1	-	1	1	-	6.8	6,800
Wilbarger	6	4	2	5	4	1	16.6	3,320
Winkler	2	1	1	2	1	1	13.4	6,700
Yoakum	1	1	-	1	1	-	8.7	8,700
Young	7	5	2	7	5	2	16.6	2,371

1/ The number of dentists indicated for each county includes responding dentists reporting location in that county and nonresponding dentists who according to obtainable information were located in that county. Based on this information 47 counties apparently had no civilian dentists in 1965.

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DENTISTS LICENSED IN UTAH

During the 1966 registration period, 1,094 dentists registered with the Utah Department of Registration. Fifty-five percent of these dentists are civilians located in Utah, 42 percent are civilians located in other States, and 3 percent are on active duty with the Armed Forces.

The survey questionnaire was completed by 882 dentists, 81 percent of the total registered. Information provided by the survey respondents has been supplemented, when possible, by data on location, age, dental school attended, and year of graduation for dentists not responding to the survey. This information was obtained either from records maintained by the Utah Department of Registration or from the 1967 American Dental Directory published by the American Dental Association.

Location and Military Status of Dentists Licensed in Utah

Location and military status	All dentists	Percent of dentists
Total licensed	1,094	100
Respondents	882	81
Nonrespondents	212	19
Total licensed	1,094	100
Civilians in Utah	598	55
Respondents	480	-
Nonrespondents	118	-
Civilians in another State	466	42
On active duty with Armed Forces	30	3

Approximately three-fourths of the survey respondents hold licenses to practice dentistry in one or more other States. Of the responding dentists located in Utah, over one-half have more than one license, with 42 percent licensed in one other State and 11 percent licensed in at least two other States. Multiple licensure is considerably more common among out-of-State dentists. Three in every ten (31 percent) hold two or more licenses in addition to their Utah license.

Survey respondents hold a total of 1,755 licenses, an average of almost two per dentist. Almost one-half of the licenses held outside of Utah were issued by the State of California. The remainder are held in 26 other States across the Nation.

DENTAL SCHOOL ATTENDED

Approximately three-fifths (57 percent) of the 598 dentists in Utah obtained their dental degrees from 14 schools located in the North Central States. Northwestern University, the major contributor, has provided one-fifth (21 percent) of the State's dentists. The University of Missouri has trained 12 percent, while Loyola University of Chicago and Washington University at St. Louis have each provided 6 percent. Case Western Reserve University is the only other school in the North Central States to have provided as many as 20 of Utah's dentists.

Dental School Attended and Year of Graduation for Dentists in Utah

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	598[1/]	-	211	222	161
		(Percent distribution by school)			
Schools in North Central States	339	57	69	51	49
Northwestern	126	21	24	21	18
Missouri	69	12	13	12	9
Loyola (Chicago)	37	6	6	3	11
Washington (St. Louis)	37	6	9	6	2
10 other schools	70	12	17	9	9
Schools in Western States	214	36	22	44	43
Southern California	82	14	4	18	21
Oregon	54	9	5	14	8
5 other schools	78	13	13	12	14
11 schools in other States	44	7	9	5	8

[1/] Dental school attended not available for 1 dentist and year of graduation for 4 dentists. Percents based on known totals.

Seven schools located in the Western States have graduated 36 percent of the dentists in Utah. The University of Southern California has contributed the largest proportion of these dentists, 14 percent of the State total, and the University of Oregon has contributed 9 percent. Only two other schools in the West--the University of California at San Francisco and the University of Washington--have supplied as many as 20 of the State's dentists. The remaining 7 percent are graduates of 11 schools located in the Southern or the Northeastern States.

DISTRIBUTION OF DENTISTS

More than four-fifths (82 percent) of the 598 dentists in Utah are located in the three metropolitan areas of the State. The 2-county Salt Lake City area alone has 336 dentists, almost three-fifths of the total dental force. Nine of every ten (297) of these dentists are in Salt Lake County, with the remaining 39 in Davis County. The Ogden and Provo-Orem metropolitan areas have 14 percent and 11 percent of the State's dentist supply, respectively.

Distribution of Utah Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	29	598	100
Metropolitan areas	4	486	82
Salt Lake City area	2	336	57
Ogden area	1	86	14
Provo-Orem area	1	64	11
Nonmetropolitan counties	25	112	18
Central city 10,000-24,999	2	42	7
Central city 5,000-9,999	4	31	5
Central city 2,500-4,999	5	19	3
Central city under 2,500	14	20	3

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

Only 18 percent of Utah's dentists are located in the 25 nonmetropolitan counties. Almost two-fifths of these dentists are located in the two counties--Cache and Box Elder--with central city populations between 10,000 and 24,999.

The 23 counties with fewer than 10,000 persons in their central cities have 11 percent of the State's supply of dentists. There are 50 dentists in the nine counties having between 2,500 and 9,999 persons in their central cities, while only 20 are scattered among the 14 counties with central city populations under 2,500. Only six of these 23 counties have as many as five dentists, while 11 have fewer than three, including five counties with no dentists, according to available information.

AGE DISTRIBUTION

Dentists in Utah are rather young as a group, with a median age of 42.3 years. About one-fourth (23 percent) of the dentists are under 35 years of age, and an almost equal proportion are 55 or older. Over one-half of the dentists (55 percent) are between 35 and 54 years of age, with 38 percent between 35 and 44. Approximately 13 percent, or 79 dentists, are 65 or older, including 48 who have reached age 70.

Age Distribution of Utah Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent
Total	598[1/]	100	-
Under 30	37	6	6
30 - 34	100	17	23
35 - 39	104	18	41
40 - 44	121	20	61
45 - 49	74	13	74
50 - 54	25	4	78
55 - 59	16	3	81
60 - 64	36	6	87
65 - 69	31	5	92
70 - 74	28	5	97
75 & over	20	3	100

[1/] Age not available for 6 dentists. Percents based on total for whom age is known.

The overall median age of dentists in the metropolitan areas is about equal to the median age of those in the nonmetropolitan counties. Among metropolitan areas, dentists in the Salt Lake City area are slightly younger, on the average, than dentists in the Ogden and Provo-Orem areas.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of 598 licensed dentists in Utah, 553, or 92 percent, are active in their profession, giving the State one professionally active dentist for every 1,805 persons. In the metropolitan areas, there is one dentist for every 1,676 persons, while the nonmetropolitan counties have a considerably higher ratio of 2,387 persons per dentist.

Number of Persons Per Active Dentist in Utah

County group*	Professionally active dentists	Population	Persons per dentist
All counties	553	998,000	1,805
Metropolitan areas	453	759,300	1,676
Salt Lake City area	312	519,700	1,666
Ogden area	82	121,600	1,483
Provo-Orem area	59	118,000	2,000
Nonmetropolitan counties	100	238,700	2,387
Central city 10,000-24,999	38	75,400	1,984
Central city 5,000-9,999	28	60,600	2,164
Central city 2,500-4,999	16	38,800	2,425
Central city under 2,500	18	63,900	3,550

* See Appendix Table for individual county data.

Among the three metropolitan areas, Ogden has the best ratio with 1,483 persons per dentist. The 2-county Salt Lake City area has the next best ratio, 1,666, while the Provo-Orem area has 2,000 persons for every dentist.

Among the 25 nonmetropolitan counties, six have ratios under 2,000, while nine have more than 3,000 persons per dentist. When counties are grouped according to the size of their central city, the ratio of persons per dentist generally becomes less favorable as the size of the central city decreases. The group of counties with central city populations between 10,000 and 24,999 has an average of 1,984 persons per dentist, while counties with fewer than 2,500 inhabitants in their central cities average one active dentist for every 3,550 persons.

UTILIZATION OF AUXILIARIES

Slightly more than four-fifths of Utah's responding dental practitioners (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 76 percent of the dentists, with 70 percent employing full-time assistants. One in every six practitioners reported the employment of a secretary or receptionist, usually on a full-time basis. Dental hygienists are utilized by about 10 percent of the dentists, and laboratory technicians,by 6 percent. Very few dentists have full-time hygienists or laboratory technicians.

Utah Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	461[1/]	100	74	7
One or more auxiliaries	364	81	74	7
Assistant	343	76	70	6
Hygienist	45	10	2	8
Laboratory technician	28	6	*	6
Secretary or receptionist	72	16	10	6
Other type of personnel	11	2	1	1
No auxiliary	86	19	-	-

1/ Includes 11 dentists who did not report on auxiliary utilization.

* Less than one-half of 1 percent.

Utilization of auxiliaries varies with the age of the dentist and is less common among the older dentists. Approximately 86 percent of the dental practitioners under age 55 employ at least one auxiliary, as compared to 50 percent of those dentists 55 years of age or older. Young dentists just starting their practices do not reach peak utilization of assistants until they are at least 30 years of age, and of hygienists, until age 35.

OTHER SURVEY FINDINGS

- Almost all (98 percent) of the responding professionally active dentists in Utah are engaged in private practice, with 97 percent self-employed and one percent employed by other dentists. The remaining 2 percent are employed by a governmental agency or are engaged in some other dental activity, such as taking advanced training.

- Approximately 15 percent (71) of the survey respondents reported that they had completed one or more years of advanced training after receiving the dental degree. Fifty-four dentists reported the completion of a year or more of advanced academic training as graduate or postgraduate students, and 24 dentists had completed clinical training as interns or residents.

- Dentists reporting on time spent in providing patient care during the year preceding the survey devoted an average of 43.2 hours per week to this activity for 48.0 weeks. One in every four dentists worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

- Ten percent of the responding dental practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics. Practically all of the limited practitioners are located in the three metropolitan areas and in the two nonmetropolitan counties with central city populations between 10,000 and 24,999.

- Of the responding dentists who are licensed in Utah but located in other States, more than three-fifths are located in California. The remaining out-of-State dentists are located in 25 other States, notably in Oregon, Idaho, Nevada and Arizona.

March 1969.

APPENDIX TABLE

Selected Data on Dentists in Utah, By Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 & over			
All counties	598	480	118	137	131	553	998.0	1,805
Metropolitan areas[2/]	486	387	99	109	103	453	759.3	1,676
Salt Lake City area	336	272	64	77	66	312	519.7	1,666
Davis	39	34	5	10	5	37	82.3	2,224
Salt Lake	297	238	59	67	61	275	437.4	1,591
Ogden area	86	65	21	22	21	82	121.6	1,483
Weber	86	65	21	22	21	82	121.6	1,483
Provo-Orem area	64	50	14	10	16	59	118.0	2,000
Utah	64	50	14	10	16	59	118.0	2,000
Nonmetropolitan counties[3/]	112	93	19	28	28	100	238.7	2,387
Central city 10,000-24,999	42	34	8	10	7	38	75.4	1,984
Box Elder	17	15	2	5	2	15	34.5	2,300
Cache	25	19	6	5	5	23	40.9	1,778

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Utah, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 & over			
Nonmetropolitan counties[3] (cont'd.)								
Central city 5,000-9,999	31	26	5	7	12	28	60.6	2,164
Carbon	7	6	1	-	5	6	19.5	3,250
Iron	8	7	1	-	4	6	11.3	1,883
Tooele	5	5	-	1	1	5	19.3	3,860
Washington	11	8	3	6	2	11	10.5	955
Central city 2,500-4,999	19	17	2	4	5	16	38.8	2,425
Grand	5	5	-	1	1	4	7.8	1,950
Juab	1	1	-	-	1	1	3.9	3,900
Sevier	5	4	1	1	1	4	9.9	2,475
Uintah	4	3	1	-	1	3	12.1	4,033
Wasatch	4	4	-	2	1	4	5.1	1,275
Central city under 2,500	20	16	4	7	4	18	63.9	3,550
Beaver	3	1	2	1	2	3	4.1	1,367
Daggett	-	-	-	-	-	-	1.5	-
Duchesne	2	2	-	1	-	2	6.7	3,350
Emery	-	-	-	-	-	-	5.1	-
Garfield	1	1	-	1	-	1	3.3	3,300
Kane	1	1	-	-	-	1	2.7	2,700
Millard	3	2	1	-	1	2	7.2	3,600

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Utah, By Location

County group and county	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 & over			
Nonmetropolitan counties[3] (cont'd.)								
Central city under 2,500 (cont'd.)								
Morgan	1	1	-	-	-	1	2.9	2,900
Piute	-	-	-	-	-	-	1.3	-
Rich	-	-	-	-	-	-	1.7	-
San Juan	3	3	-	2	-	3	10.8	3,600
Sanpete	4	4	-	1	-	4	9.9	2,475
Summit	2	1	1	1	1	1	5.2	5,200
Wayne	-	-	-	-	-	-	1.5	-

[1] Copyright 1965. Sales Management Survey of Buying Power.

[2] Utah counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

[3] Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the latest 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN VERMONT

A total of 252 dentists registered with the Vermont Board of Dental Examiners in 1965 (Table 1). Of this total, 218 completed the questionnaire, for an overall response rate of 87 percent. The response rate for dentists actually located in Vermont was somewhat higher, since nonresponse was more frequent for those who were outside the State or on active duty with the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in Vermont

Location and military status	Number of dentists	Percent of dentists
Total	252	100
Respondents	218	87
Nonrespondents	34	13
Respondents	218	100
Civilians in Vermont	157	72
Civilians in another State	48	22
On active duty with Armed Forces	10	5
Not reported	3	1

As it was, more than a fourth of those responding are located outside the State. Nearly 50 are in another State or abroad and 10 dentists are on active duty with the Armed Forces. Of those located in another State, only five reported that they had formerly been located in Vermont.

Nearly 400 individual State licenses are held by dentists responding in the survey. About three-fifths of all licensed respondents hold licenses in one or more additional States. This total includes 12 percent who are licensed in two other States and 5 percent who hold licenses in three or more additional States.

Table 2.--Percent Holding Licenses in Other States

Licenses held	Licensed dentists	Civilian dentists		Armed Forces
		In Vermont	Out-of-State	
All respondents	100	100	100	100
Vermont only	41	52	-	60
Licensed in 1 other State	42	38	56	30
Licensed in 2 other States	12	8	31	-
Licensed in 3 or more States	5	2	13	10

Although the majority of State licenses are held by dentists located outside the State, multiple licensure is very common among Vermont's own dentists as well. Nearly half of all dentists located in Vermont are licensed in one or more additional States--38 percent in one other State, 8 percent in two others, and 2 percent in three or more States.

Civilian Dentists in Vermont

Sources of Supply

Dental schools.--Graduates of 23 dental schools are represented among Vermont's dentists, including graduates of one Canadian school. Almost half of all dentists in the State, however, are graduates of Tufts (31 percent) or of Maryland (15 percent). Pennsylvania and McGill, with 11 graduates each, account for another 14 percent of the total. Of the remainder, 22 percent are accounted for by the five remaining schools--Georgetown, Temple, New York, Harvard and Nebraska--which have contributed 5 or more dentists to the State. In recent years Georgetown has joined Tufts and Maryland as one of the principal sources of the State's dentists. These three schools account for about 73 percent of all Vermont dentists who are graduates of the last 10 years.

Table 3.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	All years	Year of graduation		
			After 1955	1941-1955	1940 or earlier
Total number	157[1]	-	32	63	59
			(percent distribution by school)		
Tufts	48	31	44	29	25
Maryland	24	15	13	13	15
Pennsylvania	11	7	3	11	5
McGill	11	7	-	11	7
Georgetown	9	6	16	3	3
Temple	7	4	9	6	-
New York	7	4	3	5	5
Harvard	6	4	-	2	8
Nebraska	6	4	-	2	8
Other schools	25	17	12	18	24

[1] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item.

Dentists relocating in Vermont.--Vermont has a relatively large number of dentists who have relocated from another State. About a fourth of all dentists currently located in Vermont report that they had previously been located elsewhere (Table 4). Nearly a third of these in-migrant dentists had moved from Massachusetts or other New England States. Among the 16 other States surrendering dentists to Vermont, only New York and New Jersey contributed a significant number.

Table 4.--In-migrant Dentists

Last previous location	Number of dentists	Percent of dentists
Total	157	100
Previously located elsewhere	41	26
Massachusetts	6	4
New Jersey	5	3
New York	5	3
Other	25	16
Never located elsewhere	116	74

Personal Characteristics

Age and sex.--Vermont's dentists ranged in age from 27 to 86 in 1965. Their median age was 46.8. Approximately 30 percent of all dentists in Vermont were 55 years old or over (Table 5). Fifteen percent had

Table 5.--Sex and Age

Sex and age	Number of dentists	Percent of dentists
Total	157	100
Male	154	99
Female	3	1
Age		
Under 30	5	3
30 - 34	15	10
35 - 39	24	16
40 - 44	26	17
45 - 49	24	16
50 - 54	12	8
55 - 59	17	11
60 - 64	7	4
65 - 69	13	8
70 - 74	4	3
75 & over	7	4

reached 65 years of age. Included among the 24 dentists who made up the group were 11 dentists who were 70 years old or over, seven of whom had reached 75 years of age.

Only 3 of the 157 civilian dentists located in the State were women. Because they are so few in number, data are not presented separately by sex.

Advanced training.--Approximately 28 percent of Vermont's dentists have had some kind of advanced training (Table 6). Twenty-three percent have had advanced clinical training and 9 percent have completed at least one year of advanced academic training.

Table 6.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
Total	157	100
With advanced training	44	28
With no advanced training	113	72
Clinical training		
Residency completed	5	3
Internship completed	31	20
Academic training		
Ph.D., M.D., or other doctors	1	1
M.A., M.S., or other masters	2	1
Postgraduate 1 year or more (no degree)	11	7

Distribution and Current Status

Distribution of dentists.--The largest concentration of dentists in Vermont is in Chittenden County, the largest county in the State (Table 7). Twenty-five percent of the State's dental force are located in this county, most of them in the city of Burlington.

The four other counties in the State which contain a city of 10,000 or more residents--Rutland, Washington, Windham, and Bennington counties--account for 43 percent of the State's total dental force. About 26 percent are located in the five counties with central cities of from 5 to 10 thousand population. Only six percent are located in counties in which all towns have fewer than 5,000 residents. One of the four counties in this size category--Grand Isle--has no dentists reporting.

Table 7.--Distribution, by County Group

County size category	Number of counties	Total dentists		Age distribution		
		Number	Percent	Under 40	40-54	55 & over
All counties	14	157	100	29	40	31
Central city 25,000-49,999	1	39	25	38	49	13
Central city 10,000-24,999	4	67	43	27	40	33
Central city 5,000-9,999	5	40	26	23	31	46
Central city under 5,000	4	10	6	30	50	20

Active dentists in relation to population.--Nearly all dentists in Vermont report that they are active in the profession. About 92 percent are engaged in private practice and one percent are in other dental employment. The remaining 7 percent are either fully retired or are engaged exclusively in some nondental employment. Overall, there was one professionally active dentist for every 2,695 persons in the State (Table 8).

Table 8.--Distribution of Active Dentists

County size category	Active civilian dentists	Civilian population	Persons per dentist
Total	147	396,200	2,695
Central city 25,000-49,999	38	80,500	2,118
Central city 10,000-24,999	62	146,200	2,358
Central city under 10,000	47	169,500	3,606

There are four counties in the State with dentist-population ratios more favorable than the State average. By county size group, the ratios range from 2,118 in Chittenden County to an average of 2,358 for counties containing a city of 10,000 to 24,999 and to 3,606 for counties which lack a city of 10,000 or more.

Practice Characteristics

Use of auxiliaries.--Three in every 4 dentists in active practice report that they employ auxiliary personnel of some type (Table 9). Of the various types of personnel, dental assistants are those most frequently employed. About 63 percent of all practitioners employ an assistant. More than a fourth of all practitioners employ dental hygienists and about a fifth have a secretary or receptionist.

Table 9.--Dentists Employing One or More Auxiliaries, by Type of Auxiliary

Type of auxiliary	Active practitioners	
	Number	Percent
Total	147	100
With no auxiliary	35	24
With one or more auxiliary	112	76
Number of dentists		
With assistant	93	63
With hygienist	41	28
With laboratory technician	8	5
With secretary or receptionist	28	19
With other type of personnel	6	4

Laboratory technicians are much less frequently used in dental practice. Only 1 dentist in 20 has a laboratory technician.

The use of auxiliaries varies strikingly with the age of dentists (Table 10). The percent with an auxiliary of any type ranges from 40 percent

Table 10.--Percent of Dentists Employing Auxiliaries, by Age

Age	Percent of age group		
	With auxiliaries	With assistants	With hygienists
Under 40	93	81	42
40 - 49	84	76	35
50 - 59	67	48	19
60 & over	40	23	3

for those 60 and over to 93 percent for dentists under 40 years old. The percent employing dental assistants ranges from 23 percent for the older group to 81 percent for those under 40. The comparable range for dental hygienists is from three percent for older dentists to 42 percent for the youngest group.

Weeks and hours worked.--Of all dentists in practice in Vermont in 1965 (either as self-employed practitioners or as employees of other practicing dentists) a total of 139 reported that they had provided patient care in Vermont in the previous year. Approximately 79 percent of this group (110 dentists) reported on the number of weeks and hours they had worked during that year. The percent reporting was relatively low, however, for those 55 years old and over and, since those not responding were likely to be those who are least active, the estimates on time worked by dentists in the upper age range are probably high. Even so, the figures presented in Table 11 show how activity tapers off among older dentists. Only about three-fifths of those 55 to 64 years old reported that they worked an average of 40 hours or more for 48 weeks or more out of the year, and for those 65 years and over, this fraction dropped to two-fifths.

Table 11.--Patient Care Activity Last Year, by Age

Age group	Number reporting	Percent reporting	Percent of those reporting	
			48 weeks or more 40 hrs/wk or more	Part year or less than 40 hrs/wk
Total	110	79	63	37
Under 45	58	88	67	33
45 - 54	30	94	63	37
55 - 64	12	55	58	42
65 & over	10	59	40	60

April 1966.

Appendix Table A.--County Data

County	Civilian population (in 000's)	Active civilian dentists	Persons per dentist	Percent of active dentists		
				Under 40	55 years or more	Using auxiliaries
All counties	396.2	147	2,695	30	10	76
Addison	20.4	7	2,914	14	14	71
Bennington	25.5	11	2,318	36	18	73
Caledonia	22.1	4	5,525	25	-	75
Chittenden	80.5	38	2,118	37	5	79
Essex	5.9	2	2,950	-	50	50
Franklin	29.2	8	3,650	38	-	50
Grand Isle	2.7	-	-	-	-	-
Lamoille	10.9	3	3,633	-	-	33
Orange	15.5	5	3,100	60	-	100
Orleans	19.6	3	6,533	-	33	33
Rutland	47.6	20	2,380	35	5	80
Washington	42.9	15	2,860	20	20	73
Windham	30.2	16	1,888	25	19	94
Windsor	43.2	15	2,880	27	-	80

DENTISTS LICENSED IN VIRGINIA

During the 1965 registration period, 2,325 dentists registered with the Virginia State Board of Dental Examiners (Table 1). Sixty-eight percent of the registrants are civilians located in Virginia, another 25 percent are civilians located in other States, and 7 percent are on active duty in the Armed Forces.

Table 1.--Location and Military Status

Location and military status	All dentists	Percent of dentists
Total licensed	2,325	100
Respondents	2,232	96
Nonrespondents	93	4
Total licensed	2,325	100
Civilians in Virginia	1,580	68
Respondents	1,527	-
Nonrespondents	53	-
Civilians in another State	572	25
On active duty with Armed Forces	168	7
Not reported	5	*

* Less than one-half of one percent.

The survey questionnaire was completed by 2,232 dentists, 96 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location, age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Virginia State Board of Dental Examiners or from the 1966 American Dental Directory published by the American Dental Association.

Of all dentists responding to the survey, about 48 percent hold a license to practice dentistry in one or more other States. Almost one-third of the dentists located in Virginia hold more than one license, with 24 percent licensed in one other State and only 7 percent licensed in two or more other States. The proportion of out-of-State respondents holding multiple licenses is considerably greater; more than one-fourth hold two or more licenses in addition to their Virginia license.

Civilian Dentists in Virginia

Sources of Supply

Dental schools.--The great majority of Virginia's dentists, 63 percent, are graduates of the Medical College of Virginia (Table 2). Another 22 percent are graduates of 10 dental schools located in 5 adjacent States--Maryland, West Virginia, Kentucky, Tennessee, North Carolina--and the District of Columbia. Among these schools, Georgetown University, the University of Maryland and Howard University have made notable contributions to Virginia's dental force, having together supplied the State with 16 percent of its dentists. Other schools in these States contributing as many as 20 dentists to the Virginia supply are the University of Tennessee and Meharry Medical College. The remaining 15 percent of the State's dentists are graduates of 37 dental schools located in 17 more distant States and Canada. Emory and Northwestern Universities and the University of Pennsylvania are the largest contributors among these schools.

Table 2.--Dental School Attended

Dental school attended	Number of dentists	Percent of dentists
Total	1,580[1]	100
Medical College of Virginia	986	63
Schools in surrounding area	343	22
Georgetown University	105	7
University of Maryland	80	5
Howard University	67	4
University of Tennessee	28	2
Meharry Medical College	25	2
5 other schools	38	2
37 more distant schools	243	15

[1] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire, or, in the case of nonrespondents, due to the data not being obtainable for all dentists. For each item where percentages are shown, they are based on the number of dentists for whom the data are known. (See Appendix Table A.)

In recent years Virginia's dentists have tended to come increasingly from either the State's own dental school or other schools located nearby. The proportionate contribution of the Medical College of Virginia to the State's total supply has increased slightly from 60 percent of all dentists currently located in the State who graduated before World War II to 67 percent of those who graduated within the last 10 years. Similarly, there has been a modest increase in the contribution of dental schools in adjoining States and the District of Columbia. Conversely, the proportion of dentists who received their dental degrees from schools in more distant States or in Canada has declined from 21 percent among graduates during the period before World War II to only 10 percent among those completing their dental education during the past 10 years.

Dentists relocating in Virginia.--Six percent of the respondents practiced as civilian dentists in one of 25 other States, the District of Columbia or Puerto Rico immediately prior to assuming their present Virginia location. More than one-half of the 93 in-migrant dentists came from another Southern State, including one in every four who moved to Virginia from North Carolina or West Virginia and one in every seven who came from Maryland or the District of Columbia.

Personal Characteristics

Age.--Virginia's dentists are a relatively young group, with a median age of 42.4 years. Slightly over one-fourth of the dentists are under the age of 35, a third are between 35 and 44, and a fifth are 45 to 54 years of age (Table 3). Although only 9 percent of the dentists are 65 years old or over, this group of 142 dentists includes 44 who are 70 to 74 years old and 25 who have reached the age of 75.

Table 3.--Age Distribution

Age in 1965	Number of dentists	Percent of dentists
Total	1,580	100
Under 35	412	26
35 - 44	513	33
45 - 54	320	20
55 - 64	183	12
65 & over	142	9

A relatively large proportion of survey nonrespondents are in the older age groups. About 22 percent of the nonresponding dentists are 65 or over, more than twice the proportion of respondents in this age group. Moreover, the median age of dentists not responding to the survey is 45.0 years, almost 3 years higher than that of respondents.

Advanced training.--Twenty percent of the survey respondents, about 300 dentists, reported they had completed one year or more of advanced training beyond their dental degree. Of the 189 dentists with advanced clinical training, 60 completed a residency and 129 an internship. Among the 183 dentists who reported advanced academic training, 78 earned a master's or other advanced degree, and another 105 received no additional degrees but completed one or more years of postgraduate study. The preceding figures include 70 dentists who completed both clinical and academic training.

Distribution and Current Status

Distribution of dentists.--Virginia's dentists are unevenly distributed geographically, with two-thirds of the dental force concentrated in the six metropolitan areas of the State (Table 4). These metropolitan areas, which include 11 counties and 13 independent cities, are based on Standard Metropolitan Statistical areas as established by the U.S. Bureau of the Budget. For example, the Richmond area includes Henrico, Chesterfield and Hanover Counties and the independent cities of Richmond and Colonial Heights. Appendix Table B specifies the counties and independent cities included in each metropolitan area.

Table 4.--Distribution and Median Age

Area	Number of dentists	Percent of dentists	Median age
Total	1,580	100	42.4
All metropolitan areas	1,048	66	41.8
Northern Virginia area	314	20	39.1
Richmond area	289	18	43.4
Norfolk-Portsmouth area	216	14	42.7
Roanoke area	93	6	44.2
Newport News-Hampton area	87	5	40.6
Lynchburg area	49	3	43.3
All nonmetropolitan areas	532	34	43.5
Central city 10,000-49,999	258	16	43.4
Central city 2,500-9,999	153	10	42.9
Central city under 2,500	121	8	42.4

The greatest concentration of dentists, one-fifth of all those in the State, is in the Northern Virginia area, which comprises the Virginia part of the Washington, D.C. metropolitan area. The Richmond metropolitan area has the second largest dental force in the State, 18 percent of the total supply, and the Norfolk-Portsmouth area, with 14 percent of the total, has the third largest dentist supply. The three remaining metropolitan areas--Roanoke, Newport News-Hampton, and Lynchburg--account for another 14 percent of the State's dentists.

The remaining one-third of the State's dentists are located in the 85 counties and 21 independent cities not included within a Standard Metropolitan Statistical area. Because the independent city frequently is the center of health services for a county, each independent city has been combined with a county for presentation of the survey data. For example, Albemarle County and the independent city of Charlottesville have been combined to form one nonmetropolitan area. See Appendix Table B for combinations of counties and independent cities forming other nonmetropolitan areas. The 85 nonmetropolitan areas listed in the table consist of 19 counties combined with one or more independent cities and 66 single counties.

If the nonmetropolitan areas are grouped according to the population of the central (largest) city located within the area, the number of dentists in an area generally declines as the population of the central city decreases. Sixteen percent of the State's dentists are located in the group of 13 nonmetropolitan areas with central cities of at least 10,000 persons. Only one of these areas has less than 10 dentists, three areas have at least 30 dentists, and another four areas have 20 or more. Ten percent of the dentists are located in the group of 20 nonmetropolitan areas with central cities of 2,500-9,999 population. Among these areas, five have at least 10 dentists and only three have less than 5 dentists.

The remaining 8 percent of the State's dental force, or 121 dentists, are scattered among 52 single counties with less than 2,500 persons in their central cities. Only one county in this group has as many as 10 dentists, and 32 counties have no more than 2 dentists, including 9 counties--Amelia, Buckingham, Charles City, Craig, Cumberland, King and Queen, Rappahannock, Stafford and Surry--which have no dentists according to available information.

Geographical differences in age.--The median age of dentists in metropolitan areas is 41.8 years, almost two years younger than the median of 43.5 years for dentists in the nonmetropolitan areas (Table 4). Furthermore, there are even greater differences in age among the metropolitan areas. Northern Virginia has the youngest dentists, with a median age of 39.1 years. Almost one-third of the dentists in this area are under 35 years of age, and only 3 percent are 65 or over. Newport News-Hampton also has relatively young dentists, with a median age of 40.6 years. As a group dentists in the Roanoke area are the oldest, with less than one-fourth under 35 and 12 percent having reached the age of 65.

Active dentists in relation to population.--Ninety-eight percent, or 1,551, of the licensed dentists in Virginia were active in their profession at the time of the survey. The remaining two percent includes 24 responding dentists who are retired or engaged principally in a nondental activity, and 5 nonresponding dentists known to be 70 years of age or older. Based on these data, Virginia had one professionally active dentist for every 2,799 persons in the State in 1965.

The six metropolitan areas in Virginia together have 66 percent of the State's active dentists, and only 57 percent of its population. This disproportionate distribution of dentists in relation to population results in a persons-per-active dentist ratio of 2,388 for the metropolitan areas, compared to an average of 3,614 for the nonmetropolitan areas (Table 5).

Among the metropolitan areas, Richmond has the most favorable persons-per-dentist ratio, 1,784. The Roanoke, Northern Virginia and Lynchburg areas also have fewer persons per dentist than the State average--1,999, 2,375, and 2,455, respectively. The remaining two metropolitan areas, Norfolk-Portsmouth and Newport News-Hampton, each have one dentist for approximately 3,100 persons.

Table 5.--Number of Persons Per Dentist

Area	Professionally active dentists	Population	Persons per dentist
Total	1,551	4,341,600	2,799
Metropolitan areas	1,031	2,462,300	2,388
Richmond area	283	504,800	1,784
Roanoke area	89	177,900	1,999
Northern Virginia area	312	740,900	2,375
Lynchburg area	49	120,300	2,455
Newport News-Hampton area	85	259,300	3,051
Norfolk-Portsmouth area	213	659,100	3,094
Nonmetropolitan areas	520	1,879,300	3,614
Central city 10,000-49,999	253	710,000	2,806
Central city 2,500-9,999	149	520,400	3,493
Central city under 2,500	118	648,900	5,499

Among the nonmetropolitan areas with active dentists, the persons-per-dentist ratios range from 1,400 in Highland County to 15,200 in Patrick County. The average ratio for nonmetropolitan areas, when grouped according to size of central city, increases as the size of the central city decreases. The group of 13 nonmetropolitan areas with central cities of 10,000-49,999 population have a ratio of 2,806, a figure comparable to the average for the State. Frederick County combined with the independent city of Winchester, with one dentist for every 1,990 persons, is the only area in this group with a ratio under 2,000. In contrast, there are two areas having more than 4,000 persons per dentist, Pulaski County with a ratio of 4,650 and the combined area of Washington County and the independent city of Bristol with a ratio of 4,842. The 20 nonmetropolitan areas with 2,500 to 9,999 persons in their central cities together have a persons-per-dentist ratio of 3,493. Among these areas, only Warren County, with one dentist for every 1,611 persons, has a ratio less than 2,000. Three of the areas in this group, Mecklenburg, Page and Bedford Counties, have ratios in excess of 5,000 persons per dentist.

The remaining 52 nonmetropolitan areas in the State, consisting of single counties with central cities of less than 2,500 population, have the highest average ratio, 5,499. Only four of these counties have ratios under 2,000--Highland, Middlesex, Essex, and Northampton. Exclusive of 9 counties which apparently have no dentists, 24 counties have more than 5,000 persons per dentist, including 7 with ratios of 10,000 or more. In addition to Patrick, these counties are Floyd (10,000), Northumberland (10,200), Westmoreland (11,400), Louisa (13,000), Caroline (13,300), and Lunenburg (13,700).

Professional Activity

Current employment.--Ninety-three percent of the 1,503 responding dentists who reported that they were professionally active at the time of the survey are primarily engaged in private practice, with 92 percent self-employed and one percent employed by another dentist (Table 6). About two percent are on the staff of the dental school at the Medical College of Virginia and another three percent are employed by governmental agencies. The remaining two percent are engaged in some other dental activity, such as taking advanced training.

Table 6.--Current Employment of Professionally Active Dentists

Type of employment	Principal employment		Secondary employment[1/]	
	Number employed	Percent	Number employed	Percent of total
Total	1,503	100	155	10
Self-employed	1,379	92	6	*
Employed by other dentist	20	1	9	1
Staff of dental school	28	2	68	5
State or local government	46	3	35	2
Federal government	8	*	-	-
Voluntary agency	-	-	18	1
Other dental employment	30	2	26	2

1/ Individual items add to more than total because some dentists reported more than one type of secondary employment.

* Less than one-half of one percent.

At least one part-time dental activity in addition to their principal employment was reported by 155 dentists. Sixty-eight of these dentists said they were employed part-time on the staff of the dental school. The number of dentists so engaged is more than twice the number reporting their principal activity as a faculty appointment. Another 35 dentists reported working part-time for a State or local government agency, which almost equals the number reporting government employment as their principal activity. Other secondary activities less frequently reported include employment by another dentist and working for a voluntary agency.

Activity last year.--Of all dentists reporting their professional activity in Virginia last year, 96 percent said they provided care for patients. An equal percentage of total professional time was spent in providing patient care. Seven percent of the dentists reported they spent some time in teaching and one percent reported some time in research, but only 2 percent of total professional time was spent in these activities. While 5 percent of the dentists spent time in some other dental activity, such as taking additional training, only 2 percent of the total professional time was spent in these activities.

Dentists reporting on time spent last year in providing patient care devoted an average of 47.7 weeks to this activity and worked an average of 39.7 hours per week. Dentists who worked all year spent longer hours providing patient care than did those who worked only part of the year. Almost 70 percent of the dentists spending 48 weeks or more in patient care worked 40 or more hours per week, while only a little over one-half of those working less than 48 weeks spent as many hours each week providing care.

The amount of time worked last year by dentists in private practice declined sharply with age. Over 60 percent of the dentists under 40 years of age reported they worked at least 40 hours per week for 48 weeks or more. The proportion working this amount of time declines to 55 percent for dentists between 40 and 54 years old, and to only 38 percent for those 55 and over.

Practice Characteristics

Limited practices.--Among dentists reporting type of practice, 179, or about one in every seven, limit their practices to a dental specialty. Two-thirds of these dentists reported limiting their practices to one of two specialty areas--40 percent to orthodontics and 27 percent to oral surgery.

The metropolitan areas have a large share--over four-fifths--of the dentists who limit their practices. One in every 6 dentists practicing in a metropolitan area limits his practice, whereas in nonmetropolitan areas, only one in every 17 dentists does so. In both the Northern Virginia and Richmond areas, one dentist in every five limits his practice to a specialty. These two metropolitan areas taken together have over one-half of the State's limited practitioners and over three times as many as all nonmetropolitan areas combined.

Use of auxiliaries.--About 88 percent of the dental practitioners (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 7). The vast majority, 81 percent, of the practitioners employ at least one auxiliary full time, while only 7 percent employ part-time auxiliaries exclusively. Dental assistants are the most frequently employed auxiliary, usually on a full-time basis. Approximately 80 percent of the practitioners employ an assistant, including 73 percent who do so full time. Secretaries or receptionists are employed by 31 percent of the dentists, and a majority of these dentists employ at least one of them full time. Dental hygienists and laboratory technicians are much less frequently employed than are assistants and secretaries, and they are more likely to be employed on a part-time basis compared to other auxiliary personnel. While 12 percent of all dentists employ dental hygienists and 5 percent employ dental technicians, about three-fifths and two-fifths, respectively, of the dentists employing these auxiliaries do so on a part-time basis.

Table 7.--Dental Practitioners Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time personnel
Total	1,465	100	81	7
With one or more auxiliaries	1,242	88	81	7
With assistant	1,136	80	73	7
With hygienist	174	12	5	7
With laboratory technician	69	5	3	2
With secretary or receptionist	440	31	22	9
With other type personnel	41	3	1	2
With no auxiliary	172	12	-	-

The use of auxiliaries varies with the age of the dentist and is more frequent among young practitioners. Ninety-three percent of the dental practitioners between the ages of 30 and 44 employ some type of auxiliary. However, the proportion of practitioners utilizing auxiliaries decreases to 87 percent among dentists 45 to 64 years old and drops to 60 percent among dentists 65 and over.

Although dentists in the nonmetropolitan areas are almost as likely to employ auxiliaries as are those located in the metropolitan areas, the use of dental hygienists is considerably more common in the metropolitan areas than in the remainder of the State. About 18 percent of the dentists in the metropolitan areas report the employment of a hygienist, compared to only 4 percent of dentists located elsewhere. There are also considerable differences among the metropolitan areas in the frequency with which hygienists are employed. In the Northern Virginia area, more than one-third of the practitioners employ at least one hygienist, compared to only 11 percent of the dentists in the Norfolk-Portsmouth area and 8 percent of those in the Richmond area.

Out-of-State Civilian Dentists

Virginia licenses are maintained by at least 572 dentists located in 35 other States, the District of Columbia or Puerto Rico. Approximately one-half of the out-of-State dentists are located in adjacent States and the District of Columbia, including 23 percent who are currently located in North Carolina and 12 percent located in the District. An additional one-fourth of these dentists are located in other Southern States, the largest number in Florida. Forty-three percent of the out-of-State dentists completed their dental education at the Medical College of Virginia, and another 17 percent are graduates of dental schools in the District of Columbia.

About one in every seven out-of-State respondents reported that they had been professionally active in Virginia immediately prior to assuming their present location in one of 24 other States or the District of Columbia, most frequently North Carolina, the District, or West Virginia.

October 1967.

Appendix Table A.--Summary Statistics for Virginia

	Total dentists	Responding dentists	Nonresponding dentists
Total dentists licensed in Virginia	2,325[1/]	2,232[1/]	93[2/]
Civilian dentists in Virginia[3/] (designated simply as "dentists" in text tables)	1,580	1,527	53
Professionally active dentists[4/]	1,551	1,503	48
Dental practitioners[5/]	-	1,465	-
In limited practice[6/]	-	179	-
Located in Virginia last year:			
Reported professional activity[7/]	-	1,372	-
Dentists providing patient care[8/]	-	1,320	-
Reported time spent in patient care[8/]	-	1,094	-
Dentists in private practice[10/]	-	1,238	-
Reported time spent in practice[11/]	-	1,204	-
Civilian dentists in another State	572	539	33
Dentists on active duty in Armed Forces	168	161	7

1/ Includes 5 dentists not reporting current location or military status.

2/ Data for nonresponding dentists were obtained from the Virginia Board of Dental Examiners, and from the 1966 American Dental Directory published by the American Dental Association.

3/ All dentists who currently work in Virginia (excluding those in the Armed Forces) or who are retired and currently live in the State. Data are not available for the following: year of graduation - 47, age - 10, dental school attended - 8.

4/ Includes all responding dentists who reported they were professionally active in Virginia at the time of the survey and all nonrespondents known to be under 70 years of age.

5/ All responding dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

6/ Dentists who reported they limited their practice to a dental specialty.

7/ Dentists located in Virginia last year who indicated type(s) of activity in which they engaged.

8/ All responding dentists who engaged in patient care last year, either as a primary or a secondary activity.

9/ Dentists reporting both hours and weeks spent in patient care last year.

10/ Dentists who reported they were primarily self-employed both currently and last year.

11/ Dentists reporting both hours and weeks spent last year as a self-employed dentist.

Appendix Table B.--Selected Data on Dentists in Virginia, by Location

Area group and area	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Nonrespondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
All areas	1,580	1,527	53	412	325	1,551	4,341.6	2,799
Metropolitan areas[2]	1,048	1,012	36	283	193	1,031	2,462.3	2,388
Northern Virginia area (Arlington, Fairfax, Prince William and Loudoun Counties and Alexandria*, Falls Church* and Fairfax*)	314	307	7	98	28	312	740.9	2,375
Richmond area (Henrico, Chesterfield and Hanover Counties and Richmond* and Colonial Heights*)	289	273	16	76	65	283	504.8	1,784
Norfolk-Portsmouth area (Norfolk*, Portsmouth*, Chesapeake* and Virginia Beach*)	216	213	3	52	42	213	659.1	3,094
Newport News-Hampton area (York County and Newport News* and Hampton*)	87	82	5	27	19	85	259.3	3,051
Roanoke area (Roanoke County and Roanoke*)	93	88	5	21	29	89	177.9	1,999
Lynchburg area (Campbell and Amherst Counties and Lynchburg*)	49	49	-	9	10	49	120.3	2,455

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* Independent city.

Appendix Table B.--Selected Data on Dentists in Virginia, by Location (cont'd.)

Area group and area	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
Nonmetropolitan areas[3]	532	515	17	129	132	520	1,879.3	3,614
Central city 25,000-49,999	91	86	5	20	23	90	235.7	2,619
Albemarle County and Charlottesville*	30	29	1	7	5	30	65.2	2,173
Dinwiddie County and Petersburg*	29	27	2	7	7	28	62.4	2,229
Pittsylvania County and Danville*	32	30	2	6	11	32	108.1	3,378
Central city 10,000-24,999	167	165	2	41	40	163	474.3	2,910
Alleghany County and Covington* and Clifton Forge*	10	10	-	3	3	10	27.9	2,790
Augusta County and Waynesboro* and Staunton*	33	33	-	9	8	33	80.9	2,452
Frederick County and Winchester*	21	21	-	4	6	20	39.8	1,990
Henry County and Martinsville*	23	23	-	7	4	23	64.8	2,817
Nansemond County and Suffolk*	14	13	1	4	5	14	47.2	3,371
Prince George County and Hopewell*	12	12	-	2	2	12	40.0	3,333
Pulaski County	8	8	-	1	2	6	27.9	4,650
Rockingham County and Harrisonburg*	21	21	-	6	5	21	57.8	2,752
Spotsylvania County and Fredericksburg*	12	11	1	2	3	12	29.9	2,492
Washington County and Bristol*	13	13	-	3	2	12	58.1	4,842
Central city 5,000-9,999	105	101	4	25	29	102	345.9	3,391
Bedford County	5	5	-	2	1	5	31.6	6,320
Carroll County and Galax*	11	11	-	1	4	9	29.2	3,244

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* Independent city.

Appendix Table B.--Selected Data on Dentists in Virginia, by Location (cont'd.)

Area group and area	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 years or more			
Central city 5,000-9,999 (cont'd.)								
Greensville County	5	5	-	-	3	5	16.5	3,300
Halifax County and South Boston*	10	8	2	-	5	10	40.0	4,000
James City County and Williamsburg*	8	8	-	2	3	8	23.0	2,875
Montgomery County and Radford*	14	13	1	3	3	14	44.9	3,207
Rockbridge County and Buena Vista*	9	9	-	3	1	9	31.1	3,456
Smyth County	8	8	-	1	1	8	32.0	4,000
Southampton County and Franklin*	7	7	-	-	3	7	21.6	3,086
Warren County	9	9	-	4	2	9	14.5	1,611
Wise County and Norton*	10	10	-	4	1	10	40.2	4,020
Wythe County	9	8	1	3	2	8	21.3	2,662
Central city 2,500-4,999	48	48	-	13	11	47	174.5	3,713
Fauquier County	9	9	-	2	2	9	25.4	2,822
Giles County	4	4	-	1	-	4	16.3	4,075
Mecklenburg County	6	6	-	2	1	6	32.3	5,383
Nottoway County	5	5	-	2	1	5	15.0	3,000
Orange County	4	4	-	-	1	4	13.0	3,250
Page County	3	3	-	1	-	3	15.6	5,200
Prince Edward County	7	7	-	1	4	6	13.4	2,233
Tazewell County	10	10	-	4	2	10	43.5	4,350
Central city under 2,500	121	115	6	30	29	118	648.9	5,499
Accomack County	5	5	-	-	3	5	29.1	5,820
Amelia County	-	-	-	-	-	-	7.7	-
Appomattox County	2	1	1	-	-	2	10.2	5,100
Bath County	1	1	-	-	-	1	4.9	4,900
Bland County	1	1	-	1	-	1	5.8	5,800

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* Independent city.

Appendix Table B.--Selected Data on Dentists in Virginia, by Location (cont'd.)

Area group and area	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
Central city under 2,500 (cont'd.)								
Botetourt County	2	2	-	-	1	2	17.0	8,500
Brunswick County	3	3	-	-	1	3	17.9	5,967
Buchanan County	4	3	1	1	2	4	37.3	9,325
Buckingham County	-	-	-	-	-	-	10.2	-
Caroline County	2	2	-	-	1	1	13.3	13,300
Charles City County	-	-	-	-	-	-	5.9	-
Charlotte County	2	2	-	2	-	2	13.9	6,950
Clarke County	2	2	-	1	-	2	8.3	4,150
Craig County	-	-	-	-	-	-	3.2	-
Culpeper County	5	5	-	1	1	5	16.0	3,200
Cumberland County	-	-	-	-	-	-	5.9	-
Dickenson County	3	3	-	-	1	3	18.6	6,200
Essex County	4	4	-	1	1	4	6.8	1,700
Floyd County	1	1	-	-	-	1	10.0	10,000
Fluvanna County	2	2	-	-	1	2	7.3	3,650
Franklin County	5	5	-	1	1	5	27.5	5,500
Gloucester County	4	4	-	2	1	4	12.7	3,175
Goochland County	2	1	1	-	-	2	10.3	5,150
Grayson County	2	2	-	1	1	2	16.7	8,350
Greene County	1	1	-	1	-	1	4.7	4,700
Highland County	2	2	-	1	-	2	2.8	1,400
Isle of Wight County	4	3	1	1	1	4	18.2	4,550
King and Queen County	-	-	-	-	-	-	5.7	-
King George County	1	1	-	1	-	1	8.0	8,000
King William County	3	2	1	-	1	3	7.6	2,533
Lancaster County	3	3	-	1	1	3	9.0	3,000
Lee County	3	3	-	-	1	3	25.6	8,533
Louisa County	1	1	-	-	-	1	13.0	13,000
Lunenburg County	1	1	-	-	-	1	13.7	13,700
Madison County	3	3	-	2	-	3	8.5	2,833
Mathews County	1	1	-	-	-	1	7.2	7,200

Appendix Table B.--Selected Data on Dentists in Virginia, by Location (cont'd.)

Area group and area	Civilian dentists					Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965				
				Under 35	55 years or more			
Central city under 2,500 (cont'd.)								
Middlesex County	4	4	-	-	1	4	6.1	1,525
Nelson County	5	5	-	1	1	5	12.6	2,520
New Kent County	1	1	-	-	1	1	4.8	4,800
Northampton County	10	10	-	1	1	9	16.8	1,867
Northumberland County	1	1	-	-	-	1	10.2	10,200
Patrick County	1	1	-	1	-	1	15.2	15,200
Powhatan County	1	1	-	1	-	1	7.7	7,700
Rappahannock County	-	-	-	-	-	-	4.9	-
Richmond County	1	1	-	1	-	1	6.4	6,400
Russell County	3	2	1	1	1	3	27.6	9,200
Scott County	6	6	-	2	2	6	24.9	4,150
Shenandoah County	9	9	-	3	1	8	22.1	2,762
Stafford County	-	-	-	-	-	-	19.2	-
Surry County	-	-	-	-	-	-	6.2	-
Sussex County	3	3	-	1	2	3	12.3	4,100
Westmoreland County	1	1	-	-	-	1	11.4	11,400

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2/ Virginia counties and independent cities included in the latest 1967 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data. Statistics are presented only for dentists located in the Virginia portion of the Washington, D.C. SMSA.

3/ Nonmetropolitan areas have been grouped according to the 1960 population of the largest (central) city in each area. Independent cities have been combined with the counties in which they are located or, in the case of those bordering two counties, with an adjacent county. These combinations are based on those used in Sales Management and other publications.

DENTISTS LICENSED IN WASHINGTON

During the 1965 registration period, 2,760 dentists registered with the Washington State Board of Dental Examiners. About 71 percent of the registered dentists were civilians located in Washington, 27 percent were civilians located in other states and 2 percent were on active duty with the armed services. Of the 734 dentists licensed in Washington but located in other states at the time of the survey, more than one-third were in California and another one-fourth were located in Oregon.

Location and Military Status of Dentists
Licensed in Washington

Location and military status	All dentists	Percent of dentists
Total licensed	2,760	100
Respondents	2,085	76
Nonrespondents	675	24
Total licensed	2,760	100
Civilians in Washington	1,968	71
Respondents	1,531	-
Nonrespondents	437	-
Civilians in other states	734	27
On active duty with armed services	48	2
Not reported	10	*

* Less than one-half of one percent.

The survey questionnaire was completed by 2,085 dentists, 76 percent of all those registered. The data provided by the survey respondents has been supplemented, when obtainable, by information on location as well as age, dental school attended and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained either from records maintained by the Washington State Board of Dental Examiners or from the 1966 American Dental Directory published by the American Dental Association.

PROFESSIONAL TRAINING

More than two-thirds of the 1,968 dentists in Washington are graduates of the dental schools located at the University of Washington and the University of Oregon, each school having contributed approximately one-third of the dental force. Since 1950, however, when the University of Washington graduated its first class, this school has become the primary source of dentists, accounting for two of every three dentists in the State who completed their dental education during the ensuing years. In contrast, the University of Oregon's contribution has declined sharply from 64 percent of Washington dentists graduating prior to 1950 to 10 percent of those graduating since that time. Dentists who graduated from other schools located in the West account for only four percent of the State supply.

Almost one-fourth of Washington's dentists are graduates of 18 schools in the North Central States. Among these schools, Northwestern University and the University of Minnesota have been the principal contributors, each supplying approximately 4 percent of the total dental force. The relative contribution of schools in the North Central States has decreased somewhat since Washington's own dental school began providing dentists for the State.

Dental School Attended and Year of Graduation of Dentists in Washington

Dental school attended	Number of dentists	Year of graduation		
		All years	1950 and later	Prior to 1950
Total number	1,968[1/]	1,904	976	928
		(Percent distribution by school)		
West	1,409	73	77	69
University of Washington	636	33	65	-
University of Oregon	700	36	10	64
7 other schools	73	4	2	5
North Central	432	23	19	26
Northwestern University	77	4	3	5
University of Minnesota	76	4	2	6
Marquette University	50	3	3	2
15 other schools	229	12	11	13
Other regions (26 schools)	81	4	4	5

1/ Dental school attended not available for 46 dentists and year of graduation for 26 dentists. Percents are based on known totals.

About 15 percent of the survey respondents, or 232 dentists, reported they had completed one year or more of advanced training beyond receipt of their dental degree. A total of 125 dentists have received advanced clinical training as interns or residents and 150 have completed at least one year of advanced academic work as graduate or postgraduate students. These figures include 43 dentists who completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

More than seven-tenths of all licensed dentists in Washington are located in the four metropolitan areas of the State. The Seattle-Everett area alone has one-half of the dental force, 974 dentists, with the vast majority (863) located in King County, which contains Seattle, and the remainder (111) located in Snohomish County, containing the city of Everett. The adjacent Tacoma area and the more distant Spokane area have the next largest dental forces, each accounting for about one-tenth of the State's dentists. The Vancouver area (Clark County), which is part of the larger interstate Portland metropolitan area, accounts for 3 percent of Washington's dentist supply.

Distribution of Washington Dentists, by County Group

County group[1]	Number of counties	Number of dentists	Percent of dentists
All counties	39	1,968[2]	100
All metropolitan areas	5	1,411	72
Seattle-Everett area	2	974	50
Spokane area	1	201	10
Tacoma area	1	181	9
Vancouver area	1	55	3
All nonmetropolitan counties	34	550	28
Central city 10,000-49,999	13	401	20
Central city under 10,000	21	149	8

[1] See Appendix Table for definition of metropolitan areas and presentation of individual county data.

[2] County location not available for 7 dentists.

Some 28 percent of the State's dentists are located in the 34 nonmetropolitan counties. Almost three-fourths of these dentists are concentrated in the 13 counties with at least 10,000 persons in their central cities. Some of these counties have fairly substantial dental forces. Yakima County, for example, has 70 dentists, and three other counties--Whatcom, Thurston and Kitsap--each have more than 40 dentists. Only 3 of the remaining counties in this group have less than 20 dentists. The 21 counties with central cities of less than 10,000 population have only 8 percent of the State's dentists. Among these counties, only 2 have more than 20 dentists, while 15 have less than 10, including 7 counties with fewer than 3 dentists.

AGE OF DENTISTS

With more than one-half of the dentists under 45 years of age, the median age of dentists in Washington is 44.0 years. One-fifth of the State's dentists are under 35, yet over one-fourth are 55 years of age or older. Fifteen percent, or 272 dentists, are at least 65 years old, including 145 who have reached the age of 70. Slightly more than one-half of all dentists in the State are in the age group 35 through 54, with one-third between the ages of 35 and 44.

Age Distribution of Washington Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	1,968[1/]	100	-
Under 30	106	6	6
30 - 34	273	14	20
35 - 39	293	16	36
40 - 44	332	18	54
45 - 49	214	11	65
50 - 54	144	8	73
55 - 59	119	6	79
60 - 64	116	6	85
65 - 69	127	7	92
70 - 74	90	5	97
75 & over	55	3	100

1/ Age not available for 99 dentists. Percents based on known totals.

Median age and proportion of dentists in each age group are almost identical in the metropolitan and nonmetropolitan areas. There is more variation in age, however, among the individual counties.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 1,968 dentists in Washington, 1,858, or 94 percent, are active in their profession, giving Washington one professionally active dentist for every 1,645 persons. There is one dentist for every 1,471 persons in the metropolitan areas, while the remainder of the State has a less favorable ratio of 2,115 persons per active dentist.

Number of Persons per Active Dentist in Washington

County group[1]	Professionally active dentists	Population	Persons per dentist
All counties	1,858[2]	3,055,900	1,645
All metropolitan areas	1,338	1,968,600	1,471
Seattle-Everett area	926	1,223,000	1,321
Spokane area	189	293,400	1,552
Tacoma area	171	348,900	2,040
Vancouver area	52	103,300	1,987
Nonmetropolitan county group	514	1,087,300	2,115
Central city 10,000-49,999	375	770,800	2,055
Central city under 10,000	139	316,500	2,277

[1] See Appendix Table for individual county data.
[2] County location not available for 6 dentists.

The Seattle-Everett metropolitan area has a ratio of one dentist for every 1,321 persons, with King County having the best ratio in the State--1,242 persons per dentist--while Snohomish County has a less favorable ratio of 1,938. The nearby Tacoma area (Pierce County) has one dentist for every 2,040 persons, a ratio similar to that of Snohomish County. The Spokane area has a somewhat better ratio, 1,552 persons per dentist, which compares favorably with the State average.

Among the nonmetropolitan counties of the State, the group of 13 counties with central cities of 10,000 or more population has an average of 2,055 persons per dentist, a ratio slightly more favorable than the average of 2,277 persons per dentist found in the group of 21 counties with central cities of less than 10,000 population. The range in individual county ratios is considerably greater; 12 counties have persons-per-dentist ratios under 2,000, yet 7 counties have ratios exceeding 3,000 persons per dentist, including 3 counties with ratios over 4,000 and 1 county with no dentist.

UTILIZATION OF AUXILIARIES

Eighty-eight percent of the responding dental practitioners in Washington (i.e., dentists who spend any time working at the chair) reported they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 83 percent of all practitioners, including 75 percent who employ at least one assistant on a full-time basis. Secretaries or receptionists are employed by 28 percent of the dentists with about three-fifths of these dentists utilizing such personnel full time. Twenty-one percent of the dentists employ dental hygienists and 14 percent employ dental technicians. A majority of the dentists who employ hygienists or technicians do so only part time.

Washington Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed by dentists	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	1,447[1/]	100	81	7
One or more auxiliaries	1,223	88	81	7
Assistant	1,149	83	75	8
Hygienist	286	21	4	17
Laboratory technician	185	14	4	10
Secretary or receptionist	395	28	17	11
Other type of personnel	58	4	1	3
No auxiliary	166	12	-	-

1/ Includes 58 dentists who did not report on auxiliary utilization.

Employment of auxiliaries varies with the age of the dentist, becoming less frequent among dentists in the older age groups. Approximately 95 percent of Washington dentists between the ages of 30 and 44 employ some type of auxiliary. The proportion using auxiliaries decreases to 85 percent among dentists 45 to 64 years of age, and to 58 percent among dentists 65 and over.

Although dentists in metropolitan areas are no more likely to employ auxiliary personnel than are those located in nonmetropolitan counties, the use of hygienists is much more common in metropolitan areas than in the remainder of the State. About 24 percent of the dentists in metropolitan areas report the employment of hygienists, compared to only 11 percent of those in nonmetropolitan counties.

OTHER SURVEY FINDINGS

*** Ninety-six percent of the professionally active dentists in Washington are primarily engaged in private practice. Another two percent are teaching in a dental school, and the remaining 2 percent are either employed by government agencies or are engaged in other dental activities, such as taking advanced training.

*** At least one part-time dental activity in addition to their principal employment was reported by 11 percent of the dentists. Nearly one-half of these dentists are on the faculty of a dental school on a part-time basis. The remainder reported a variety of secondary activities, such as part-time employment by a governmental agency, employment in the private practice of another dentist and assistance to a voluntary agency.

*** Dentists reporting time spent in providing patient care devoted an average of 39.5 hours per week to this activity for 47.9 weeks during the year preceding the survey. About one dentist in seven worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks.

*** About 13 percent of the practitioners reported that they limit their practices to a dental specialty, most frequently orthodontics, with pedodontics and prosthodontics the next most frequent areas. Dentists in the metropolitan areas are somewhat more likely to limit their practices to a dental specialty than are those in the nonmetropolitan counties.

*** Sixteen percent of the respondents, 244 dentists, practiced as civilian dentists in one of 40 other states immediately prior to assuming their present Washington location. More than one-third of these dentists moved to Washington from California or Oregon, and another 22 percent came from the North Central States.

*** Almost 40 percent of the dentists located in Washington are also licensed to practice dentistry in other states. One-third of all out-of-state licenses are held in Oregon and another one-fifth are held in California. Washington dentists are also licensed in 36 other states, primarily the North Central States of Minnesota, Illinois and Iowa.

APPENDIX TABLE

Selected Data on Dentists in Washington, by Location

County group and County	Civilian dentists						Population[1] (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 35	55 years or more			
All counties	1,968	1,531	437	308	383	1,858	3,055.9	1,645
Metropolitan areas[2]	1,411	1,100	311	218	276	1,338	1,968.6	1,471
Seattle-Everett area	974	745	229	154	180	926	1,223.0	1,321
King	863	660	203	131	161	821	1,019.5	1,242
Snohomish	111	85	26	23	19	105	203.5	1,938
Tacoma area	181	155	26	30	45	171	348.9	2,040
Pierce	181	155	26	30	45	171	348.9	2,040
Spokane area	201	152	49	24	38	189	293.4	1,552
Spokane	201	152	49	24	38	189	293.4	1,552
Vancouver area[3]	55	48	7	10	13	52	103.3	1,987
Clark	55	48	7	10	13	52	103.3	1,987
Nonmetropolitan counties[4]	550	424	126	85	107	514	1,087.3	2,115
Central city 25,000-49,999	157	130	27	32	24	148	302.0	2,041
Kitsap	41	35	6	11	4	39	81.3	2,085
Whatcom	46	38	8	9	13	43	71.2	1,656
Yakima	70	57	13	12	7	66	149.5	2,265
Central city 10,000-24,999	244	183	61	33	47	227	468.8	2,065
Benton	28	17	11	2	2	28	67.8	2,421
Chelan	30	19	11	3	6	28	41.1	1,468
Clallam	19	14	5	-	4	16	31.8	1,988
Cowlitz	24	20	4	3	5	23	60.8	2,643
Franklin	9	5	4	3	-	9	24.7	2,744
Grant	20	17	3	6	2	19	50.0	2,632

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Washington, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 35	55 years or more			
Nonmetropolitan counties (cont'd.)								
Central city 10,000-24,999 (cont'd.)								
Grays Harbor	25	21	4	3	7	23	55.3	2,404
Thurston	45	36	9	8	12	42	60.0	1,429
Walla Walla	28	22	6	3	5	25	43.7	1,748
Whitman	16	12	4	2	4	14	33.6	2,400
Central city 5,000-9,999	79	57	22	6	18	76	157.7	2,075
Asotin	6	5	1	2	-	6	13.9	2,317
Jefferson	4	2	2	-	1	4	9.7	2,425
Kittitas	11	8	3	1	2	11	21.9	1,991
Lewis	21	16	5	2	7	21	42.0	2,000
Mason	8	3	5	-	1	6	16.8	2,800
Skagit	29	23	6	1	7	28	53.4	1,907
Central city 2,500-4,999	54	40	14	12	13	48	108.7	2,265
Adams	6	4	2	1	2	6	11.4	1,900
Columbia	1	1	-	-	-	1	4.4	4,400
Island	10	8	2	4	2	9	21.8	2,422
Klickitat	8	5	3	1	3	4	14.1	3,525
Okanogan	13	10	3	2	1	13	25.9	1,992
Pacific	10	9	1	4	4	9	13.7	1,522
Stevens	6	3	3	-	1	6	17.4	2,900
Central city under 2,500	16	14	2	2	5	15	50.1	3,340
Douglas	3	3	-	1	-	3	14.8	4,933
Ferry	-	-	-	-	-	-	3.8	-
Garfield	2	1	1	-	1	2	2.8	1,400
Lincoln	4	3	1	1	1	4	10.8	2,700

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Washington, by Location

County group and county	Civilian dentists						Population[1/] (in 000's)	Persons per active dentist
	Total	Respond- ents	Non- respond- ents	Age in 1965		Profes- sionally active		
				Under 35	55 years or more			
Nonmetropolitan counties (cont'd.)								
Central city under 2 500 (cont'd.)								
Pend Oreille	2	2	-	-	2	2	6.7	3,350
San Juan	2	2	-	-	-	2	2.7	1,350
Skamania	2	2	-	-	1	1	5.3	5,300
Wahkiakum	1	1	-	-	-	1	3.2	3,200

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2/ Washington counties included in the latest 1967 definition of Standard Metropolitan Statistical areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ For the interstate Portland SMSA, statistics are presented only for dentists located in the Washington portion (Clark County), herein designated as the Vancouver area.

4/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN WEST VIRGINIA

A total of 822 dentists registered with the West Virginia Board of Dental Examiners during the 1965 reregistration period (Table 1). The survey questionnaire was completed by 759 dentists, or 92 percent of all those registering. However, among those responding, only 556 dentists, or 73 percent, are actually located in West Virginia. Another 21 percent of the respondents are civilian dentists located in another State or abroad and the remaining 6 percent are on active duty with the Armed Forces.

Table 1.--Location and Military Status of Dentists Licensed in West Virginia

Location and military status	All dentists	Percent of dentists
Total licensed	822	100
Respondents	759	92
Nonrespondents	63	8
Respondents	759	100
Civilians in West Virginia	556	73
Civilians in another State	158	21
On active duty with Armed Forces	45	6

The 759 responding dentists hold a total of more than 1,250 licenses in all States. A relatively large proportion, three-fifths, of the dentists located in West Virginia hold only the one State license (Table 2). The proportion of dentists on active duty in the Armed Forces who are licensed only in West Virginia is almost as large. Multiple licensure occurs most frequently among the civilian dentists who are located in other States. While licenses are held in 2 or more other States by only 4 percent of the civilian in-State dentists and 13 percent of the dentists in the Armed Forces, licenses are held in 2 or more additional States by 29 percent of the civilian dentists who are located outside the State.

Table 2.--Percent of Dentists Holding Licenses in Other States

Licenses held	All respondents	Civilian dentists		Armed Forces
		In West Virginia	Out-of-State	
Total	100	100	100	100
West Virginia license only	46	58	-	54
Licensed in 1 other State	44	38	71	33
Licensed in 2 other States	9	3	25	13
Licensed in 3 or more other States	1	1	4	-

Civilian Dentists in West Virginia

Sources of Supply

Dental schools.--West Virginia's dentists are graduates of 30 dental schools. More than three-fourths of all dentists in the State were graduated from 10 dental schools located in adjacent States--Kentucky, Maryland, Ohio, Pennsylvania, and Virginia--including two schools (The Cincinnati College of Dental Surgery and the Ohio College of Dental Surgery) which are no longer in existence.

The dental school at the University of Maryland, which has graduated one-fourth of the dentists in West Virginia, has long been the primary source of the State's dentist supply (Table 3). However, the proportion of the State's dentists graduating from Maryland has declined substantially in recent years, and chiefly because of the growing role of West Virginia's new school of dentistry in supplying dentists for the State.

Although the first class at West Virginia was not graduated until 1961, graduates of this school account for 3 percent of all dentists located in the State. In fact, the new school is rapidly becoming West Virginia's primary source of dentist supply. Its graduates account for three of every five dentists in the State who have completed their dental education in the years since West Virginia produced its first graduating class. However, because many graduating dentists seek advanced training or enter the Armed Forces prior to establishing their practices, the contribution of these first few graduating classes to the State's dentist supply will not be fully determined for a few more years.

Table 3.--School Awarding Dental Degree, by Year Awarded

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total number	556[1/]	556	89	248	218
		(Percent distribution by school)			
Maryland	139	25	20	30	22
Pittsburgh	95	17	17	19	15
Louisville	74	13	14	11	16
Ohio College (extinct)	37	7	-	-	17
Northwestern	33	6	2	10	3
Virginia	27	5	14	4	2
Ohio State	20	4	2	4	4
West Virginia	19	3	22	-	-
Indiana	14	3	-	1	6
Emory	10	2	-	2	2
20 other schools	84	15	9	19	13

[1/] Individual items in this and succeeding tables may not add to the totals shown due to the failure of some responding dentists to reply to all items on the questionnaire. Where percentages are shown, they are based on data supplied by dentists responding to the item (see Appendix Table A).

The dental schools of the Universities of Pittsburgh and Louisville have also been major contributors of dentists to West Virginia, and their proportionate contribution has remained relatively constant through the years. One other school--the College of Dentistry of The Medical College of Virginia--has also become a relatively important source of dentists in recent years.

The remainder of the State's dentists--about a fifth in all--are graduates of 19 dental schools located in 12 more distant States and the District of Columbia. Northwestern, Indiana, and Emory Universities have contributed the greatest number of these dentists.

Dentists relocating in West Virginia.--One in every 8 dentists currently in West Virginia was located as a civilian in another State or abroad immediately prior to assuming his present West Virginia location. Of the 67 immigrant dentists, 28, or 42 percent, moved to West Virginia from one of the 5 adjacent States. The remainder came from 24 other States, the District of Columbia or abroad. More than one-half of the immigrant dentists located in West Virginia during the 1950's, and about a quarter moved to the State in 1960 or more recently.

Personal Characteristics

Age and sex.--West Virginia's dentists, as a group, are not very young. The median age in 1965 of reporting dentists was 47.6 years. Less than one-fourth of the dentists were under 40 years of age, while slightly over one-third were at least 55 years old, including one-fifth who were aged 65 and over (Table 4). There are only 5 women dentists included among the respondents. For this reason, data for women will not be shown separately in this report.

Table 4.--Age Distribution

Age	Number of dentists	Percent of dentists
Total	556	100
Under 30	18	3
30 - 34	47	8
35 - 39	65	12
40 - 44	116	21
45 - 49	62	11
50 - 54	61	11
55 - 59	34	6
60 - 64	46	8
65 - 69	50	9
70 - 74	36	7
75 & over	21	4

Advanced training.--About 15 percent of all dentists in the State have completed one year or more of advanced training. The majority--11 percent of the total--have had advanced clinical training as interns or residents (Table 5).

Although advanced academic education is somewhat less common, more than half of those who have advanced training (8 percent of the State's dental force) have completed at least one year of academic work beyond their dental degree. Four percent of all dentists in the State have had both advanced clinical training and a year or more of graduate or postgraduate academic work.

Table 5.--Advanced Training

Highest level of training completed	Number of dentists	Percent of dentists
With advanced training	82	15
Clinical training only	38	7
Academic training only	23	4
Both clinical and academic	21	4
Clinical training		
Residency completed	20	4
Internship completed	39	7
Academic training		
Ph.D., M.D., or other doctor's degree	1	*
M.A., M.S., or other master's degree	18	3
Postgraduate 1 year or more (no degree)	25	4

*Less than one-half of one percent.

Among dentists under 40 years of age, 21 percent report having received a year or more of advanced training. In contrast, only 16 percent of those aged 40 to 54, and 9 percent of those 55 years or older report having had this much advanced education. The tendency for younger dentists to seek more training is especially marked in the case of advanced academic work. One in every 6 dentists under 40 years of age has had a year or more of graduate or postgraduate study as compared with one in every 30 of those 55 years old or more.

Distribution and Current Status

Distribution of dentists.--West Virginia's dentists are unevenly distributed geographically, with 71 percent of the reporting dentists located in only 13 of the State's 55 counties. Four of these 13 counties, each of which has 10 or more dentists, are located in metropolitan areas. The remaining nine are nonmetropolitan counties, i.e., they have central cities of less than 50,000 population, and they are not part of a multi-county grouping with a central city of 50,000 or more. (Appendix Table B lists individual counties by size of central city and shows the number of reporting dentists in each county.)

More than two-fifths of all responding dentists are located in the four metropolitan areas of West Virginia (Table 6). The greatest concentration of dentists, 18 percent of all respondents, is in Kanawha County, which comprises the Charleston metropolitan area. The Huntington, Wheeling and

Table 6.--Distribution by County Group

County group	Number of counties	Number of dentists	Percent of dentists
All counties	55	556	100
All metropolitan areas	7	232	42
Charleston area	1	99	18
Huntington area	2	68	12
Wheeling area	2	46	8
Weirton area	2	19	4
Nonmetropolitan county groups	48	324	58
Central city 25,000-49,999	3	77	14
Central city 10,000-24,999	4	82	15
Central city 5,000- 9,999	10	60	11
Central city 2,500- 4,999	8	58	10
Central city under 2,500	23	47	8

Note: See Appendix Table B for a listing of counties within each county group and the number of dentists located in each county.

Weirton areas--each of which is a part of a larger interstate metropolitan area--account for 24 percent of the State's dentist supply. Cabell County, one of the two counties constituting the Huntington area, has the second largest dental force in the State, and Ohio County, in the Wheeling area, has the third largest.

Many of the nonmetropolitan counties in the State also have fairly sizable numbers of dentists. Each of the three counties with central cities of 25,000-49,999 persons--Harrison, Wood and Marion--has a larger dental force than the Weirton area, for example. And, Monongalia County, one of the State's 4 nonmetropolitan counties with central cities of 10,000-24,999 population, has the fourth largest number of dentists of any county in the State. The fact that this county is the site of the dental school contributes, at least in part, to the large number of reporting dentists located there.

Among counties containing a city of 10,000 or more people, only Berkeley County has fewer than 10 responding dentists. By contrast, only 3 of the 41 counties without a city of this size (McDowell, Fayette, and Greenbriar) have as many as 10 reporting dentists. Among the 23 counties with fewer than 2,500 persons in their central cities, three--Calhoun, Clay and Monroe--have no reporting dentists. None of the remaining 20 counties in this group has more than 6 reporting dentists.

There are marked differences in the age distribution of reporting dentists in the various county groups and also among the individual counties. On the average, dentists are younger in the Charleston area, in the two groups of nonmetropolitan counties with central cities of 10,000 or more population, and in counties with central cities of less than 2,500 persons (Table 7).

Of the 52 counties with reporting dentists, 24 have no dentists under 35 years of age. Furthermore, 17 of these counties have no dentists under 40 years old and 7 have none under 45. At least one half of the dentists in 19 counties reported they were 55 years of age or older.

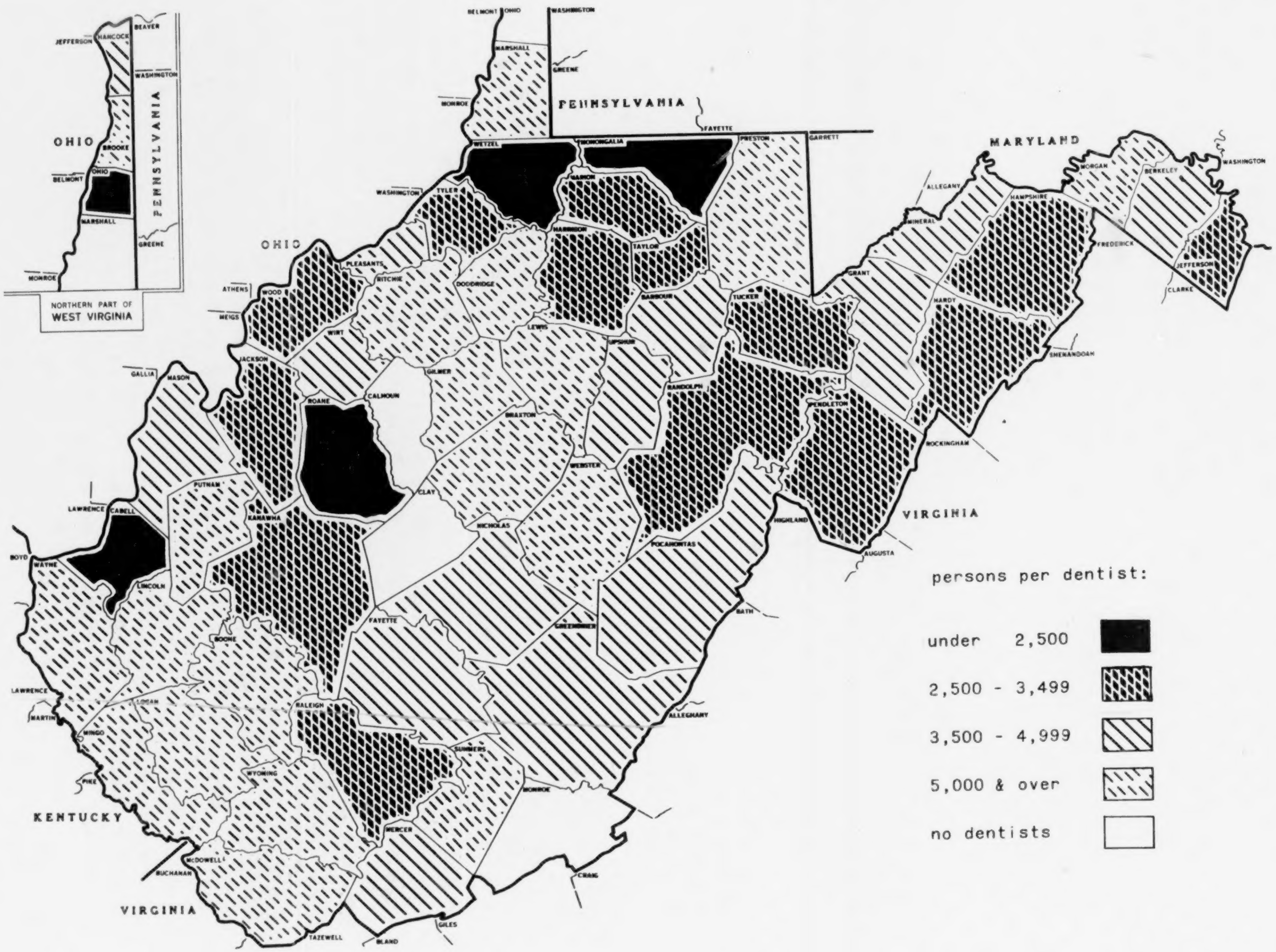
Table 7.--Median Age and Age Distribution, by County Group

County group	Median age	Percent of dentists				
		Under 35	35-44	45-54	55-64	65 & over
All counties	47.6	12	33	22	14	19
All metropolitan areas	47.5	10	34	24	13	19
Charleston area	45.6	12	37	24	14	13
Huntington area	48.0	10	35	22	12	21
Wheeling area	49.2	7	33	22	15	23
Weirton area	50.8	10	21	32	5	32
Nonmetropolitan county groups	47.6	13	32	21	15	19
Central city 25,000-49,999	47.2	12	32	17	18	21
Central city 10,000-24,999	45.0	9	40	27	11	13
Central city 5,000- 9,999	51.4	15	22	26	12	25
Central city 2,500- 4,999	50.0	14	26	17	19	24
Central city under 2,500	45.8	15	34	15	19	17

The counties making up the Weirton area have the largest concentration of older dentists, with almost a third of all dentists in this area reporting that they were 65 years old or over in 1965. Counties with central cities ranging from 2,500 to 10,000 also have relatively large numbers of dentists who are 65 years old or over. In these counties, one in every four dentists reported having reached this age.

Professional status.--Of the 556 civilian dentists in West Virginia, 538, or 97 percent, reported that they were professionally active at the time of the survey. Fourteen dentists regard themselves as fully retired, 2 are engaged in nondental employment and the remaining 2 did not report their current status. Even though almost all of the retired dentists are in the older age groups, relatively few of the older dentists who responded to the survey consider themselves retired. Of the 106 dentists 65 years and over, only 10 percent reported themselves as fully retired.

POPULATION PER DENTIST IN WEST VIRGINIA BY COUNTY: 1965


persons per dentist:
under 2,500 ■
2,500 - 3,499 ▨
3,500 - 4,999 ▨
5,000 & over ▨
no dentists □
OHIO
PENNSYLVANIA
MARYLAND
VIRGINIA
KENTUCKY
NORTHERN PART OF WEST VIRGINIA
JEFFERSON
HANCOCK
BEAVER
WASHINGTON
BROOKE
BELMONT
OHIO
MARSHALL
GREENE
MONROE
WETZEL
MONONGALIA
FAYETTE
PRESTON
GARRETT
ALLEGANY
MINERAL
HAMPSHIRE
MORGAN
BERKELEY
FREDERICK
JEFFERSON
CLARKE
GRANT
HARDY
SHENANDOAH
ROCKINGHAM
PENDLETON
TUCKER
MARION
HARRISON
TAYLOR
BARBOUR
TYLER
PLEASANTS
RITCHIE
DODDRIDGE
WOOD
ATHENS
MEIGS
WIRT
JACKSON
ROANE
CALHOUN
GILMER
LEWIS
UPSHUR
RANDOLPH
BRAXTON
WEBSTER
GALLIA
MASON
PUTNAM
KANAWHA
CLAY
NICHOLAS
POCAHONTAS
HIGHLAND
AUGUSTA
BATH
LAWRENCE
CABELL
BOYD
WAYNE
LINCOLN
BOONE
FAYETTE
GREENBRIER
ALLEGHANY
LOGAN
MINGO
MARTIN
PIKE
RALEIGH
SUMMERS
MONROE
WYOMING
MCDOWELL
MERCER
BUCHANAN
TAZEWELL
BLAND
GILES
CRAIG

Active dentists in relation to population.--In general, there are fewer persons per active dentist in the metropolitan areas than in the nonmetropolitan county groups--the persons-per-dentist ratios range from 2,151 in the Huntington area to 5,730 for the group of counties with less than 2,500 persons in their central cities (Table 8).

Table 8.--Number of Persons per Active Dentist

County group	Professionally active dentists	Civilian population	Persons per active dentist
All counties	538	1,780,800	3,310
All metropolitan areas	221	572,400	2,590
Charleston area	93	251,600	2,705
Huntington area	68	146,300	2,151
Wheeling area	43	102,300	2,379
Weirton area	17	72,200	4,247
Nonmetropolitan county groups	317	1,208,400	3,812
Central city 25,000-49,999	75	211,200	2,816
Central city 10,000-24,999	81	223,800	2,763
Central city 5,000- 9,999	59	255,700	4,334
Central city 2,500- 4,999	56	254,100	4,538
Central city under 2,500	46	263,600	5,730

The ratios of the 52 counties with professionally active reporting dentists vary considerably more than the data for county groups indicate. Monongalia County has the most favorable ratio with one professionally active dentist for every 1,531 persons, while Putnam County with 12,400 persons for every responding dentist has the least favorable ratio (see Appendix Table C for individual county data). However, if the dentists who reported they are primarily associated with the West Virginia University, School of Dentistry are excluded, the relationship of population to dentists in Monongalia County becomes less favorable, with an adjusted ratio of one dentist to every 2,755 persons. On this basis, Ohio and Cabell Counties have the most favorable ratios, with 1,727 and 1,759 persons, respectively, for every active dentist. In addition to these 3 counties, there are only 15 other counties with fewer persons per dentist than the State average of one professionally active respondent for every 3,310 persons in West Virginia.

In many of the remaining 34 counties with reporting active dentists, the persons-per-dentist ratio is considerably less favorable than the State average. In addition to Putnam County, there are 19 counties with ratios in excess of 5,000 persons per active dentist, including 6 counties with more than 8,000 persons per dentist--Boone (8,267), Morgan (8,300), Gilmer (8,900), Lewis (10,050), Lincoln (10,100) and Ritchie (10,200).

Professional Activity

Current employment.--Almost all of the professionally active dentists in West Virginia are primarily engaged in private practice: 94 percent are self-employed and 1 percent are employed by another dentist (Table 9). About 3 percent of the State's dentists are on the staff of the dental school at the University of West Virginia and the remaining 2 percent are either employed by federal, State or local government agencies, or are engaged in other dental employment.

Table 9.--Current Employment of Professionally Active Dentists

Type of principal employment	Principal employment		Secondary employment	
	Number employed	Percent	Number reporting	Percent of total
Total	538	100	35	7
Self-employed	502	94	30	6
Employed by other dentists	6	1	1	*
On staff of dental schools	17	3	1	*
Employed by State or local government	5	1	3	1
Other dental employment	8	1	-	-

*Less than one-half of one percent.

A small proportion of the active dentists, 7 percent, reported that they were employed in a part-time dental activity in addition to their primary professional employment. Most of these dentists who engaged in part-time secondary employment are private practitioners. Even though they are few in number, these dentists reported a variety of secondary dental activities. For instance, about one-half reported part-time employment in a governmental health agency providing such services as dental consultation to the Veterans Administration hospitals and patient care in local health clinics. Other dentists reported that they teach part-time at the dental school or in one of the State's dental hygiene training programs. A few are employed by private organizations, primarily voluntary agencies.

Activity last year.--Of all dentists reporting on their professional activity in West Virginia last year, 97 percent said they provided care to patients (Table 10). These dentists spent 95 percent of the total reported professional time in providing patient care. Six percent of the dentists reported they spent some time in teaching, but only 3 percent of total professional time was spent at this activity. While two percent of the dentists were engaged in research activities and three percent spent time in some other dental activity, such as taking additional training, only two percent of the total reported professional time was spent in these two types of activities.

Table 10.--Professional Activity Last Year

Type of activity	Dentists reporting activity last year		Percent of total professional time
	Number	Percent	
Total	500[1]	100[1]	100
Patient care	485	97	95
Teaching	29	6	3
Research	11	2	1
Other	15	3	1

[1] Individual items add to more than total because some dentists spent time in more than one type of activity.

Of the dentists who provided patient care, slightly more than four-fifths reported having spent 48 weeks or more at this activity in the previous year (Table 11). Dentists who worked all year (48-52 weeks) spent longer hours providing patient care than did those who worked only part of the year. Seven of every 10 dentists spending 48 weeks or more in patient care worked 40 or more hours per week, while only 5 in every 10 working less than 48 weeks spent as much time providing care.

Table 11.--Time Spent in Patient Care Last Year

Weeks spent in patient care	Percent of dentists providing patient care	Percent distribution by work week				
		48 hours or more	41-47 hours	40 hours	35-39 hours	Under 35 hours
Total	100	16	16	35	18	15
50 weeks or more	48	8	8	18	8	6
48-49 weeks	33	6	6	11	7	3
40-47 weeks	14	2	2	4	2	4
Less than 40 weeks	5	*	*	2	1	2

*Less than one-half of one percent.

Practice Characteristics

Limited practices.--Only one in every ten dentists in West Virginia reported that they limit their practices to a dental specialty. Over two-thirds of these dentists reported their practices are limited to one of two specialty areas--38 percent in oral surgery and 30 percent in orthodontics. Specialization is more common in the metropolitan areas where 14 percent of the dentists reported limited practices than in the nonmetropolitan areas where only 6 percent of the dentists limited their practices.

Use of auxiliaries.--Almost three-fourths of the dental practitioners in West Virginia (i.e., dentists who spend any time working at the chair) report that they employ auxiliary personnel (Table 12). The majority of the practitioners, 64 percent, employ dental assistants, while the next most frequently employed personnel, secretaries and receptionists, are employed by only 21 percent. Both types of auxiliaries are employed on a full-time basis by most of the dentists. Dental hygienists and laboratory technicians are much less frequently utilized by practitioners in West Virginia. Not only are these auxiliaries employed by proportionately fewer dentists, but they are more frequently employed on a part-time basis than are assistants and secretaries.

Table 12.--Auxiliary Utilization by Dental Practitioners

Type of auxiliary	Number of practitioners	Percent of practitioners
Total	524	100
With one or more auxiliaries	381[1]	73[1]
With assistant	336	64
With hygienist	64	12
With laboratory technician	20	4
With secretary or receptionist	110	21
With other type of personnel	18	3
With no auxiliary	143	27

[1] Individual items add to more than total because some dentists employ more than one type of auxiliary.

Auxiliary utilization varies according to the age of the dentist and is greatest among the young dentists. About 85 percent of the dental practitioners between the ages of 35 and 44 employ auxiliaries. In contrast, auxiliaries are utilized by only 46 percent of the practitioners 65 years or older.

In general, the location of the dentist does not greatly influence the degree of auxiliary utilization. Among the county groups, the percent of practitioners employing auxiliaries ranges only from 76 percent of those in metropolitan areas to 68 percent of those in the nonmetropolitan county group with central cities of 25,000-49,999. As the data in Appendix Table C indicate, a proportionately large number of dentists in most counties utilize auxiliary personnel.

About 13 percent of the dental practitioners in West Virginia reported one or more vacant positions for auxiliary personnel. About 37 percent of the dentists reported vacancies for full-time hygienists and 36 percent reported vacancies for full-time dental assistants. Four of every five dentists reporting a vacancy already employ an auxiliary.

Out-of-State Civilian Dentists

State Location

West Virginia licenses are maintained by at least 158 civilian dentists located in 23 States, the District of Columbia and Puerto Rico (Table 13). About three-fifths of these out-of-State dentists are located in the five adjacent States, primarily in Virginia and Maryland. Florida is the only more distant State in which at least ten percent of the out-of-State dentists are currently located.

Table 13.--Out-of-State Civilian Dentists, by Present Location

Present location	Number of dentists	Percent of dentists
Total	158	100
Adjacent States	94	60
Kentucky	9	6
Maryland	23	15
Ohio	18	11
Pennsylvania	16	10
Virginia	28	18
Nonadjacent States	64	40
California	7	4
Florida	16	10
North Carolina	8	5
16 other States	33	21

A large proportion of the out-of-State dentists are graduates of dental schools at the Universities of Maryland and Pittsburgh (24 percent and 17 percent, respectively). However, 14 percent of all out-of-State civilian dentists are graduates of the West Virginia University, School of Dentistry, and these dentists account for almost all of the out-of-State dentists who have completed their dental education in the last few years.

Age and Professional Status

As a group, the out-of-State civilian dentists are younger than those presently in West Virginia. While only 23 percent of the dentists located in West Virginia were under 40 years of age in 1965, 52 percent of the out-of-State civilian dentists were in this young age group. Furthermore, only 5 percent of the out-of-State dentists were 65 years old or over, as compared with

20 percent of the in-State dentists. However, the relatively low proportion of older out-of-State dentists may be attributed, at least in part, to the fact that as a dentist becomes more established he is less likely to maintain a license in a State in which he is not practicing.

Ninety-nine percent of the out-of-State dentists report that they are professionally active. The majority, 78 percent, are in private practice. About 12 percent are employed in governmental agencies, 3 percent are on the staffs of dental schools and the remaining 5 percent are engaged in other dental activities, such as taking advanced training.

Outmigrant Dentists

Almost three of every ten out-of-State respondents reported that they had formerly been located in West Virginia. (Because these figures include only civilian dentists who were professionally active in West Virginia immediately prior to assuming their present location in another State, they do not reflect those residents of West Virginia who chose to establish their practices in other States immediately following completion of their dental education.) About three-fifths of the 44 reporting outmigrant dentists are now located in five States--Virginia, Florida, Ohio, Pennsylvania and California--and the remaining two-fifths are scattered in 11 other States and the District of Columbia.

October 1966.

Appendix Table A.--Summary Statistics for West Virginia

	Number of dentists
All licensed dentists	822
Respondents -- total dentists participating in survey	759
Civilian dentists in West Virginia[1] -- civilian respondents designated simply as "dentists" in text tables	556
(number not reporting: principal current employment - 4, year of graduation - 1, school of graduation - 4)	
Professionally active dentists[2]	538
In limited practice[3]	50
Dental practitioners[4]	524
Located in West Virginia last year:	
Reported professional activity[5]	500
Dentists providing patient care[6]	485
Reported time spent in patient care[7]	374
Out-of-State dentists -- civilian respondents not located in West Virginia	158
Dentists on active duty in Armed Forces	45
Nonrespondents -- licensed dentists not participating in survey	63

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[1] All responding dentists who currently work in West Virginia (excluding those in the Armed Forces) or who are retired and currently live in the State.

[2] All active civilian dentists currently in West Virginia--excludes 14 dentists who are fully retired and 4 who did not report their principal current activity.

[3] Dentists who reported they limited their practice to a dental specialty.

[4] All dentists practicing at the chair, that is, dentists who work as clinicians either as primary or secondary activity.

[5] Dentists located in West Virginia last year who indicated type(s) of activity in which they engaged.

[6] All dentists who engaged in patient care last year, either as a primary or secondary activity.

[7] Dentists reporting both hours and weeks spent in patient care last year.

Appendix Table B.--West Virginia Counties by County Group

Metropolitan Areas[1/]

County group	Number of responding civilian dentists
Charleston area	
Kanawha	99
Huntington area	
Cabell	61
Wayne	7
Wheeling area	
Ohio	40
Marshall	6
Weirton area	
Hancock	14
Brooke	5

Nonmetropolitan Counties[2/]

County group	Central City	Number of responding civilian dentists
Central city 25,000-49,999		
Harrison	Clarksburg	29
Marion	Fairmont	22
Wood	Parkersburg	26
Central city 10,000-24,999		
Berkeley	Martinsburg	8
Mercer	Bluefield	16
Monongalia	Morgantown	36
Raleigh	Beckley	22
Central city 5,000-9,999		
Lewis	Weston	2
McDowell	Welch	11
Mason	Point Pleasant	6
Mineral	Keyser	6
Mingo	Williamson	7
Randolph	Elkins	9
Summers	Hinton	2
Taylor	Grafton	4
Upshur	Buckhannon	5
Wetzel	New Martinsville	8

Appendix Table B.--West Virginia Counties by County Group (continued)

Nonmetropolitan Counties[2]

County group	Central City	Number of responding civilian dentists
Central city 2,500-4,999		
Fayette	Oak Hill	11
Greenbrier	White Sulphur Springs	10
Jackson	Ravenswood	8
Logan	Logan	9
Nicholas	Richwood	5
Preston	Kingwood	4
Roane	Spencer	6
Wyoming	Mullens	5
Central city under 2,500		
Barbour	Philippi	3
Boone	Masison	3
Braxton	Cassaway	2
Calhoun	Grantstown	-
Clay	Clay	-
Doddridge	West Union	2
Gilmer	Glenville	1
Grant	Petersburg	2
Hampshire	Romney	4
Hardy	Moorefield	3
Jefferson	Charles Town	6
Lincoln	Hamlin	2
Monroe	Peterstown	-
Morgan	Bath	1
Pendleton	Franklin	3
Pleasants	St. Marys	2
Pocahontas	Marlinton	2
Putnam	Hurricane	2
Ritchie	Pennsboro	1
Tucker	Parsons	2
Tyler	Sistersville	3
Webster	Addison	2
Wirt	Elizabeth	1

1/ West Virginia counties included in the latest 1966 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for the presentation of the survey data. For interstate SMSA's, statistics are presented only for dentists reporting their location in the West Virginia portion of the Huntington-Ashland SMSA, Wheeling SMSA, and Steubenville-Weirton SMSA.

2/ Counties not included within a SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

Appendix Table C.--Selected Data for West Virginia Counties

Counties with responding active dentists	Professionally active dentists	Civilian population (000)1/	Persons per active dentist	Number of active dentists: By age: Under 40 years	Number of active dentists: By age: 55 years and over	Number of active dentists: Using auxiliaries
Total	538	1,780.82/	3,310	129	170	381
Barbour	3	13.7	4,567	1	1	2
Berkeley	8	35.3	4,412	2	1	7
Boone	3	24.8	8,267	1	-	3
Braxton	2	13.9	6,950	-	1	1
Brooke	4	29.9	7,475	3	-	2
Cabell	61	107.3	1,759	17	19	47
Doddridge	1	7.6	7,600	-	-	1
Fayette	11	54.0	4,909	5	4	9
Gilmer	1	8.9	8,900	-	1	1
Grant	2	8.2	4,100	1	1	1
Greenbrier	8	32.3	4,038	5	3	6
Hampshire	4	10.3	2,575	1	2	1
Hancock	13	42.3	4,254	1	5	9
Hardy	3	8.8	2,933	-	1	2
Harrison	28	72.2	2,579	9	10	18
Jackson	8	20.0	2,500	3	5	6
Jefferson	6	19.3	3,217	1	2	5
Kanawha	93	251.6	2,705	22	22	75
Lewis	2	20.1	10,050	-	1	2
Lincoln	2	20.2	10,100	1	-	2
Logan	9	51.8	5,756	2	4	7
McDowell	11	59.0	5,364	3	5	5
Marion	21	60.4	2,876	2	11	11
Marshall	6	38.4	6,400	-	3	1
Mason	5	24.9	4,980	1	1	4
Mercer	16	65.3	4,081	3	3	12
Mineral	6	22.9	3,817	1	2	6
Mingo	7	36.4	5,200	1	4	4
Monongalia	36	55.1	1,531	9	9	16
Morgan	1	8.3	8,300	-	-	1
Nicholas	5	22.4	4,480	-	-	5
Ohio	37	63.9	1,727	9	12	27
Pendleton	3	7.5	2,500	-	2	2
Pleasants	2	7.5	3,750	-	1	1
Pocahontas	2	9.0	4,500	0	0	2

Appendix Table C.--Selected Data for West Virginia Counties (continued)

Counties with responding active dentists	Professionally active dentists	Civilian population (000)[1]	Persons per active dentist	Number of active dentists: By age: Under 40 years	Number of active dentists: By age: 55 years and over	Number of active dentists: Using auxiliaries
Preston	4	25.4	6,350	-	2	3
Putnam	2	24.8	12,400	1	-	2
Raleigh	21	68.1	3,243	5	5	20
Randolph	9	27.3	3,033	2	2	8
Ritchie	1	10.2	10,200	-	1	1
Roane	6	14.6	2,433	2	3	1
Summers	2	14.0	7,000	-	-	1
Taylor	4	13.4	3,350	2	1	4
Tucker	2	6.5	3,250	-	1	1
Tyler	3	9.9	3,300	1	1	2
Upshur	5	17.8	3,560	-	1	3
Wayne	7	39.0	5,571	1	3	4
Webster	2	11.9	5,950	1	-	1
Wetzel	8	19.9	2,488	3	4	4
Wirt	1	4.0	4,000	-	1	-
Wood	26	78.6	3,023	6	7	21
Wyoming	5	33.6	6,720	1	3	1

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2/ Includes the 28,300 persons in Calhoun, Clay and Monroe Counties which have no responding dentists.

DENTISTS LICENSED IN WISCONSIN

During the 1966 registration period, 3,457 dentists registered with the Wisconsin Board of Dental Examiners. A total of 3,176 dentists responded to the survey, 92 percent of all those registered. Seventy-one percent of the respondents are civilian dentists located in Wisconsin, another 21 percent are civilians located in other States, and 8 percent are on active duty with the Armed Forces.

Location and Military Status of Dentists
Licensed in Wisconsin

Location and military status	All dentists	Percent of dentists
Total licensed	3,457	100
Respondents	3,176	92
Nonrespondents	281	8
Respondents	3,176	100
Civilians in Wisconsin	2,255	71
Civilians in another State	666	21
On active duty with Armed Forces	255	8

About 35 percent of the respondents hold licenses to practice dentistry in one or more other States. Only 16 percent of the dentists located in Wisconsin have more than one license, with 14 percent licensed in one other State and 2 percent licensed in two or more other States. The proportion of responding out-of-State dentists holding multiple licenses is considerably greater; approximately 22 percent hold two or more licenses in addition to their Wisconsin license.

Almost one-half (49 percent) of the licenses held outside of Wisconsin were issued by adjacent States, including 21 percent in Illinois, 13 percent in Minnesota, 11 percent in Michigan, and 4 percent in Iowa. The remaining out-of-State licenses are maintained in 41 other States, including 11 percent in California, and 4 percent each in Florida and Colorado.

PROFESSIONAL TRAINING

Four-fifths of Wisconsin's 2,255 responding dentists graduated from the School of Dentistry at Marquette University. Another 15 percent are graduates of seven dental schools located in adjacent States, including 5 percent from Northwestern University, 4 percent from the University of Minnesota, and 3 percent from Loyola University of Chicago. Two other schools in adjacent States, the Universities of Illinois and Iowa, have together provided about 50 dentists, 2 percent of the State supply. The remaining 4 percent of Wisconsin's dentists obtained their dental degrees from 25 other schools located in more distant States. Among these, St. Louis and Creighton Universities are the only schools to have supplied as many as 10 dentists to the State's dental force.

Dental School Attended and Year of Graduation for Dentists in Wisconsin

Dental school attended	Number of dentists	Year of graduation			
		All years	After 1955	1941-1955	1940 or earlier
Total	2,255 [1/]	-	477	781	986
		(Percent distribution by school)			
Marquette University	1,826	81	83	81	80
Schools in adjacent States	349	15	13	14	18
Northwestern University	109	5	3	5	6
University of Minnesota	99	4	3	4	5
Loyola University (Chicago)	76	3	2	2	5
4 other schools	65	3	5	3	2
25 other schools	80	4	4	5	2

[1/] Year of graduation not available for 11 dentists. Percents based on known totals.

About one-fifth (21 percent) of the State's dentists have graduated from dental school since 1955. In contrast, more than two-fifths (44 percent) received their dental degrees prior to World War II. There has been virtually no change over the years in the overall proportion of dentists graduating from Wisconsin's own dental school, or from out-of-State schools.

Approximately 11 percent of the survey respondents, 257 dentists, reported they had completed one or more years of advanced training after receiving the dental degree. Of 181 dentists taking advanced academic training, 98 received at least a master's degree, while another 83 received no additional degree but reported the completion of one or more years of advanced work at the postgraduate level. Of the 132 dentists with advanced clinical training, 83 had completed an internship, and 49 a residency. There are 56 dentists who have taken both academic and clinical training.

DISTRIBUTION OF DENTISTS

Over one-half (54 percent) of the dentists in Wisconsin are located in the six metropolitan areas of the State. The 4-county Milwaukee area alone has 838 dentists, 37 percent of the total dentist supply. More than four-fifths of these dentists (704) are concentrated in Milwaukee County, and another 92 dentists are located in Waukesha County. The Madison metropolitan area has the next largest dental force in the State, with 8 percent of the dentists. The areas of Racine and Green Bay each have 3 percent of the State's dentists, while the remaining two areas, Kenosha and Superior, have 2 percent and 1 percent, respectively.

Distribution of Wisconsin Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	72	2,255	100
Metropolitan areas	9	1,228	54
Milwaukee area	4	838	37
Madison area	1	171	8
Racine area	1	72	3
Green Bay area	1	71	3
Kenosha area	1	53	2
Superior area	1	23	1
Nonmetropolitan counties	63	1,027	46
Central city 10,000-49,999	15	582	26
Central city 5,000-9,999	15	236	10
Central city under 5,000	33	209	10

* See Appendix Table for definition of metropolitan areas and presentation of individual county data.

The 63 nonmetropolitan counties have a substantial share (46 percent) of the Wisconsin dentist supply. The 15 counties having 10,000 or more persons in their central cities have 582 dentists, about one-fourth of the total dental force. Five of these counties--Winnebago, Rock, Outagamie, La Crosse, and Sheboygan--each have more than 50 dentists. The 48 counties with central city populations under 10,000 have one-fifth (445) of the State's supply of dentists. Among these 48 counties, 19 have 10 or more dentists, yet 11 have fewer than five dentists.

AGE OF DENTISTS BY AREA

The median age of dentists in Wisconsin is 47.4 years. Three of every ten (690 dentists) are under 40 years of age, and two-thirds of these are under age 35. An almost equal proportion, 32 percent, are between 45 and 54 years of age, while 37 percent are 55 or over. About 18 percent of the dentists (412) are at least 65 years of age, including 198 who have reached the age of 70.

Median Age and Age Distribution of Wisconsin Dentists,
by County Group

County group	Median age	Percent of dentists		
		Under 40	40-54	55 & over
All counties	47.4	31	32	37
Metropolitan areas	46.9	33	31	36
Milwaukee area	48.0	31	30	39
Madison area	43.7	39	36	25
Racine area	48.2	26	40	34
Green Bay area	45.3	39	27	34
Kenosha area	45.3	36	34	30
Superior area	44.2	39	13	48
Nonmetropolitan counties	48.0	28	32	40
Central city 10,000-49,999	47.4	29	34	37
Central city 5,000-9,999	48.9	23	34	43
Central city under 5,000	53.6	25	26	49

Dentists in the metropolitan areas, with a median age of 46.9 years, are only slightly younger than dentists in the nonmetropolitan counties, where the median age is 48.0 years. Among the metropolitan areas, Milwaukee and Racine have the oldest dentists as a group, with median ages of 48.0 and 48.2, respectively. The youngest group of dentists is found in the Madison area where the median age is 43.7 years. Almost two-fifths of these dentists are under 40 years of age, while only one-fourth are 55 or over.

Among the nonmetropolitan counties, those with central cities of less than 5,000 persons have the oldest group of dentists, with a median age of 53.6 years--more than six years higher than the median for all dentists in the State. Only one-fourth of these dentists are under 40 years of age, while almost one-half are 55 and older.

ACTIVE DENTISTS IN RELATION TO POPULATION

Of the 2,255 dentists in Wisconsin, 2,100, or 93 percent, are active in their profession, giving the State one professionally active dentist for every 2,007 persons. In the metropolitan areas there are 1,841 persons per dentist, while the nonmetropolitan counties have a somewhat higher ratio of 2,210.

Number of Persons per Active Dentist in Wisconsin

County group*	Professionally active dentists	Population	Persons per dentist
All counties	2,100	4,215,300	2,007
Metropolitan areas	1,153	2,122,500	1,841
Milwaukee area	783	1,409,800	1,801
Madison area	164	261,000	1,591
Racine area	66	157,200	2,382
Green Bay area	67	138,100	2,061
Kenosha area	52	112,400	2,162
Superior area	21	44,000	2,095
Nonmetropolitan counties	947	2,092,800	2,210
Central city 10,000-49,999	541	1,088,600	2,012
Central city 5,000-9,999	216	479,200	2,219
Central city under 5,000	190	525,000	2,763

* See Appendix Table for individual county data.

Among the metropolitan areas, Madison has the best ratio of 1,591 persons per dentist, while Milwaukee has the next best, with 1,801 persons. Two areas--Green Bay and Superior--have ratios slightly higher than the State average (2,061 and 2,095, respectively), while the Kenosha and Racine areas have the least favorable of the metropolitan ratios.

Of the 63 nonmetropolitan counties, 16 have persons-per-dentist ratios below the average for the State, while 15 have more than 3,000 persons for every dentist, including three counties with ratios of 5,500 or more. Generally, persons-per-dentist ratios become less favorable as the size of the central city decreases. The counties with 10,000 or more inhabitants in their central cities have an average of 2,012 persons per dentist. In comparison, the counties with central cities under 5,000 average about one active dentist for every 2,763 persons.

UTILIZATION OF AUXILIARIES

Almost three out of every four dental practitioners in Wisconsin (i.e., dentists who spend any time working at the chair) reported that they employ auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 66 percent of the dentists, including 59 percent who employ at least one assistant on a full-time basis. Twenty-four percent of the dentists employ secretaries or receptionists, with about three-fifths of these dentists utilizing such personnel full time. Dental hygienists are employed by 20 percent of the practitioners, and laboratory technicians by 5 percent. The majority of the dentists who employ hygienists or technicians do so only part time.

Wisconsin Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed by dentists	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	2,078 1/	100	66	8
One or more auxiliaries	1,459	74	66	8
Assistant	1,298	66	59	7
Hygienist	404	20	7	13
Laboratory technician	96	5	1	4
Secretary or receptionist	476	24	14	10
Other type of personnel	58	3	1	2
No auxiliary	512	26	-	-

1/ Includes 107 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and tends to be more common among the younger dentists. More than 85 percent of the practitioners between the ages of 30 and 44 employ some type of auxiliary. The proportion utilizing auxiliaries decreases to 68 percent among dentists 45 to 64 years of age, and to 46 percent among dentists 65 and over.

About 16 percent of the Wisconsin practitioners reported one or more vacant positions for auxiliary personnel. Of these dentists, more than one-third had vacant positions for full-time hygienists, and one-fourth reported vacancies for full-time dental assistants.

OTHER SURVEY FINDINGS

☐ Ninety-five percent of the professionally active dentists in Wisconsin are primarily engaged in private practice, with 94 percent self-employed and 1 percent employed by another dentist. Two percent are employed by governmental agencies, another 1 percent are on the staff of a dental school, and the remaining 2 percent are engaged in some other dental activity, such as taking advanced training.

☐ About one dentist in nine reported at least one part-time dental activity in addition to his principal employment. Part-time teaching in a dental school was the most frequently reported secondary activity. Various other activities were reported, including employment by the State or local government and assistance to a voluntary agency.

☐ Dentists providing patient care during the year preceding the survey devoted an average of 40.2 hours a week to this activity for 47.6 weeks. About one dentist in eight worked the equivalent of six days a week, 48 hours or more, for at least 48 weeks during the year.

☐ Approximately 8 percent of the practitioners reported that they limit their practice to a dental specialty, primarily to orthodontics. More than one in every ten dentists in metropolitan areas limits his practice as compared to only one in every twenty of the dentists in nonmetropolitan counties.

☐ One-fifth of the survey respondents (666 dentists) were located in another State at the time of the survey. About 35 percent of these out-of-State dentists were in adjacent States, primarily Illinois. The other out-of-State dentists were scattered among 43 more distant States, with the largest number located in California.

October 1968.

APPENDIX TABLE

Selected Data on Dentists in Wisconsin, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Percent under 40	Percent 55 or more			
All counties	2,255	31	37	2,100	4,215.3	2,007
Metropolitan areas 2/	1,228	33	36	1,153	2,122.5	1,841
Milwaukee area	838	31	39	783	1,409.8	1,801
Milwaukee	704	28	41	660	1,116.6	1,692
Ozaukee	18	50	11	18	45.6	2,533
Washington	24	33	33	23	52.2	2,270
Waukesha	92	48	26	82	195.4	2,383
Madison area	171	39	25	164	261.0	1,591
Dane	171	39	25	164	261.0	1,591
Racine area	72	26	33	66	157.2	2,382
Racine	72	26	33	66	157.2	2,382
Green Bay area	71	39	34	67	138.1	2,061
Brown	71	39	34	67	138.1	2,061
Kenosha area	53	36	30	52	112.4	2,162
Kenosha	53	36	30	52	112.4	2,162
Superior area 3/	23	39	49	21	44.0	2,095
Douglas	23	39	49	21	44.0	2,095

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Wisconsin, by Location

County group and county	Civilian dentists				Population [1/] (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Percent under 40	Percent 55 or more			
Nonmetropolitan counties [4/]	1,027	28	40	947	2,092.8	2,210
Central city 25,000-49,999	440	33	34	410	823.9	2,010
Eau Claire	34	35	32	33	61.8	1,873
Fond Du Lac	35	26	46	32	75.8	2,369
La Crosse	55	35	27	51	74.7	1,465
Manitowoc	36	44	33	34	77.5	2,279
Marathon	39	28	31	38	92.6	2,437
Outagamie	59	44	25	56	111.3	1,988
Rock	61	31	41	57	124.5	2,184
Sheboygan	53	19	42	44	89.7	2,039
Winnebago	68	37	32	65	116.0	1,785
Central city 10,000-24,999	142	25	39	131	264.7	2,021
Ashland	10	50	30	8	17.4	2,175
Chippewa	21	24	29	20	46.3	2,315
Dodge	36	17	53	33	65.8	1,994
Marinette	20	5	45	19	34.1	1,795
Portage	16	31	36	15	37.9	2,527
Wood	39	33	31	36	63.2	1,756
Central city 5,000-9,999	236	23	43	216	479.2	2,219
Barron	19	21	47	19	33.9	1,784
Columbia	21	14	52	19	38.1	2,005
Crawford	6	33	50	6	15.7	2,617

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Wisconsin, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes- sionally active		
		Percent under 40	Percent 55 or more			
Nonmetropolitan counties 4/ (cont'd.)						
Central city 5,000-9,999 (cont'd.)						
Door	7	29	43	5	20.6	4,120
Dunn	11	27	36	10	25.6	2,560
Grant	21	19	48	21	45.7	2,176
Green	17	12	47	15	26.7	1,780
Jefferson	26	19	42	24	54.5	2,271
Langlade	14	14	64	9	19.0	2,111
Lincoln	8	25	38	8	22.4	2,800
Monroe	13	31	39	13	31.1	2,392
Oneida	14	36	36	12	22.8	1,900
Sauk	17	24	47	15	35.3	2,353
Shawano	14	7	57	13	31.4	2,415
Walworth	28	36	18	27	56.4	2,089
Central city 2,500-4,999	147	25	52	132	347.8	2,635
Calumet	5	40	60	5	23.9	4,780
Clark	17	29	47	15	31.0	2,067
Green Lake	8	12	50	7	15.7	2,243
Iowa	5	20	60	4	19.7	4,925
Iron	3	33	67	3	7.4	2,467
Jackson	5	20	60	4	14.7	3,675
Juneau	6	-	83	4	16.9	4,225
Kewaunee	11	18	82	9	18.7	2,078
Oconto	8	38	50	7	24.2	3,457

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Wisconsin, by Location

County group and county	Civilian dentists			Profes-sionally active	Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965				
		Percent under 40	Percent 55 or more			
Nonmetropolitan counties 4/ (cont'd.)						
Central city 2,500-4,999 (cont'd.)						
Pierce	11	9	27	11	23.0	2,091
Price	7	-	57	6	13.4	2,233
Richland	7	29	43	6	17.1	2,850
Rusk	5	40	20	5	13.9	2,780
St. Croix	14	36	43	13	30.7	2,362
Taylor	5	20	60	5	17.5	3,500
Vernon	11	27	55	10	24.6	2,460
Waupaca	19	32	47	18	35.4	1,967
Central city under 2,500	62	27	42	58	177.2	3,055
Adams	1	-	-	1	7.4	7,400
Bayfield	2	-	50	2	11.0	5,500
Buffalo	3	-	33	3	14.0	4,667
Burnett	2	-	50	2	8.7	4,350
Florence	-	-	-	-	3.2	-
Forest	5	20	60	5	6.9	1,380
Lafayette	5	20	40	4	18.1	4,525
Marquette	1	-	100	1	8.4	8,400
Menomonee	-	-	-	-	2.7	-
Pepin	4	25	75	4	7.2	1,800
Polk	15	40	27	13	24.9	1,915
Sawyer	5	20	60	4	9.0	2,250
Trempealeau	9	22	44	9	23.3	2,589

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Wisconsin, by Location

County group and county	Civilian dentists				Population 1/ (in 000's)	Persons per active dentist
	Total	Age in 1965		Profes-sionally active		
		Percent under 40	Percent 55 or more			
Nonmetropolitan counties 4/ (cont'd.)						
Central city under 2,500 (cont'd.)						
Vilas	5	60	40	5	9.3	1,860
Washburn	2	-	-	2	9.7	4,850
Waushara	3	67	33	3	13.4	4,467

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2/ Wisconsin counties included in the latest 1968 definition of Standard Metropolitan Statistical Areas, as established by the U.S. Bureau of the Budget, Office of Statistical Standards, have been grouped as metropolitan areas for presentation of the survey data.

3/ Wisconsin part of the Duluth-Superior SMSA. Statistics are presented only for dentists located in the Wisconsin portion of the area.

4/ Counties not included within an SMSA, as defined by the U.S. Bureau of the Budget, have been grouped according to the 1960 population of the largest (central) city within each county.

DENTISTS LICENSED IN WYOMING

During the 1965 registration period, 265 dentists registered with the Wyoming Board of Dental Examiners. Fifty-seven percent of these dentists were civilians located in Wyoming, and another 37 percent were civilian dentists located in other States. Five percent of the registered dentists were on active duty with the Armed Forces, and the remaining one percent did not report their location or military status.

Location and Military Status of Dentists
Licensed in Wyoming

Location and military status	All dentists	Percent of dentists
Total licensed	265	100
Respondents	204	77
Nonrespondents	61	23
Total licensed	265	100
Civilians in Wyoming	153	57
Respondents	130	-
Nonrespondents	23	-
Civilians in another State	97	37
On active duty with Armed Forces	13	5
Not reported	2	1

The survey questionnaire was completed by a total of 204 dentists, for an overall response rate of 77 percent. However, the response rate of dentists actually located in Wyoming was somewhat higher, 85 percent, since nonresponse was more frequent among dentists located outside the State or on active duty with the Armed Forces.

The data provided by the survey respondents has been supplemented, when possible, by information on location, age, dental school attended, and year of graduation for dentists not responding to the survey. Information on nonrespondents was obtained from records maintained by the Wyoming Board of Dental Examiners and from the 1966 American Dental Directory published by the American Dental Association.

PROFESSIONAL TRAINING

More than four-fifths (83 percent) of Wyoming's dentists are graduates of 12 dental schools located in the North Central States. Two dental schools in adjacent Nebraska--Creighton University and the University of Nebraska--have been the major contributors, providing 21 percent and 15 percent of the State's dentists, respectively. The next largest contributors--the University of Missouri, Northwestern University, and Washington University at St. Louis--have each provided 8 percent of Wyoming's dentists. Four other schools in these States--the Universities of Iowa and Minnesota, St. Louis University, and Loyola University of Chicago--have each provided 5 percent of the State's dental force.

Another 14 percent of the State's dentists graduated from five schools located in Western States. The dental school at the University of Denver, although closed since 1930, is the only one of these schools to have contributed as much as 5 percent of Wyoming's dentist supply.

Dental School Attended and Year of Graduation
for Dentists in Wyoming

Dental school attended	Number of dentists	Year of graduation: All years	After 1955	1941-1955	1940 or earlier
Total number	153 1/	-	45	46	60
		(Percent distribution by school)			
North Central States	128	83	81	89	80
Creighton University	33	21	18	26	22
University of Nebraska	23	15	18	17	8
University of Missouri	13	8	2	9	13
Northwestern University	12	8	7	2	13
Washington University (St. Louis)	12	8	11	7	7
7 other schools	35	23	25	28	17
Western States (5 schools)	20	14	16	4	18
Other States (5 schools)	5	3	3	7	2

1/ Year of graduation not available for 2 dentists.

Some 13 percent of the survey respondents (17 dentists) reported that they had completed one or more years of advanced training after receiving their dental degree. Eleven dentists had received advanced clinical training as interns or residents and nine had completed at least one year of advanced academic work as graduate or postgraduate students. Three dentists had completed both academic and clinical training.

DISTRIBUTION OF DENTISTS

Approximately three-fifths, 89, of the 153 dentists in Wyoming are located in only five of the State's 24 counties. The two counties with the largest central cities--Laramie, which contains the city of Cheyenne, and Natrona, where Casper is located--have 18 and 19 percent of the dentist supply, respectively. Another 21 percent (32 dentists) are located in the three counties having central cities of 10,000-24,999 persons, including 8 percent each in Albany and Sheridan Counties and 5 percent in Sweetwater County.

Distribution of Wyoming Dentists, by County Group

County group*	Number of counties	Number of dentists	Percent of dentists
All counties	24	153	100
Central city 25,000-49,999	2	57	37
Laramie County	1	28	18
Natrona County	1	29	19
Central city 10,000-24,999	3	32	21
Central city 5,000-9,999	3	24	16
Central city 2,500-4,999	8	26	17
Central city under 2,500	8	14	9

* See Appendix Table for presentation of individual county data.

The 19 counties with central city populations under 10,000 have about two-fifths (42 percent) of the State's dentist supply. The 11 counties with central cities having between 2,500 and 9,999 inhabitants have one-third of Wyoming's dental force, while the eight counties with less than 2,500 persons in their central cities have only one-tenth of the dentist supply. Of these 19 counties, only Fremont has as many as 10 dentists, while 13 counties have fewer than five dentists.

AGE DISTRIBUTION OF DENTISTS

The median age of dentists in Wyoming is 46.3 years. Slightly more than one-third (53 dentists) are under 40 years of age, including 23 percent who are under 35. Another one-third of the dentists are between 40 and 54 years of age, while an almost equal proportion are 55 or over. About one in every seven dentists (14 percent) are at least 65 years of age.

Age Distribution of Wyoming Dentists

Age in 1965	Number of dentists	Percent of dentists	Cumulative percent distribution
Total	153 [1/]	100	-
Under 30	9	6	6
30 - 34	26	17	23
35 - 39	18	12	35
40 - 44	19	13	48
45 - 49	14	9	57
50 - 54	16	11	68
55 - 59	19	13	81
60 - 64	8	5	86
65 - 69	11	7	93
70 - 74	6	4	97
75 & over	5	3	100

[1/] Age not available for 2 dentists. Percents are based on the total for whom age is known.

There are some variations in the median ages of dentists by county group. Dentists in Laramie and Natrona Counties, whose central cities have more than 25,000 persons, are on the average about 45 years of age, while dentists in the three counties with 10,000-24,999 persons in their central cities (Albany, Sheridan, and Sweetwater) have a combined median age of 47 years. Dentists in the 19 counties with central city populations under 10,000 are the oldest as a group, with a median age of approximately 49 years.

ACTIVE DENTISTS IN RELATION TO POPULATION

Approximately 97 percent of the 153 dentists in Wyoming are active in their profession, giving the State one professionally active dentist for every 2,370 persons. Of the two largest counties, Natrona has the more favorable ratio, 2,064 persons per dentist, while Laramie County has a somewhat higher ratio of 2,496. The three counties having between 10,000 and 24,999 persons in their central cities average one active dentist for every 1,881 persons, a ratio considerably better than the average for the State as a whole. Sheridan and Albany Counties have 1,533 and 1,823 persons per dentist, respectively, while Sweetwater County has a much higher ratio of 2,700.

Number of Persons per Active Dentist in Wyoming

County group*	Professionally active dentists	Population	Persons per dentist
All counties	148	350,800	2,370
Central city 25,000-49,999	55	125,200	2,276
Laramie County	27	67,400	2,496
Natrona County	28	57,800	2,064
Central city 10,000-24,999	31	58,300	1,881
Central city 5,000-9,999	22	53,700	2,441
Central city 2,500-4,999	26	70,600	2,715
Central city under 2,500	14	43,000	3,071

* See Appendix Table for individual county data.

Among the 19 counties in the State with central city populations under 10,000, there are five with persons-per-dentist ratios below the average for the State, yet seven counties have ratios of 3,000 or more, including two counties with 4,000 or more persons for every dentist. Generally, the ratio of persons per dentist becomes less favorable as the size of the central city decreases. The group of counties having 5,000-9,999 inhabitants in their central cities have an average of 2,441 persons for every dentist. In comparison, the eight counties with central city populations under 2,500 average one dentist for every 3,071 persons.

UTILIZATION OF AUXILIARIES

Eighty-five percent of the responding dental practitioners in Wyoming (i.e., dentists who spend any time working at the chair) reported that they employ some type of auxiliary personnel. Dental assistants, the most frequently employed auxiliary, are utilized by 79 percent of the dentists, including 77 percent who employ at least one on a full-time basis. Secretaries or receptionists are employed by 28 percent of the practitioners, with about one-half of these dentists using such personnel full time. Laboratory technicians and dental hygienists are employed by 19 percent and 12 percent of the dentists, respectively. The majority of the dentists who employ technicians or hygienists do so only part time.

Wyoming Dentists Employing Auxiliaries, by Type of Auxiliary

Type of auxiliary employed by dentists	Dental practitioners	Percent of dental practitioners		
		Total	With one full-time employee (or more)	With only part-time employees
Total	126 [1/]	100	83	2
One or more auxiliaries	105	85	83	2
Assistant	98	79	77	2
Hygienist	15	12	1	11
Laboratory technician	23	19	4	15
Secretary or receptionist	35	28	14	14
Other type of personnel	1	1	-	1
No auxiliary	19	15	-	-

[1/] Includes 2 dentists who did not report on auxiliary utilization.

Utilization of auxiliaries varies with the age of the dentist and is less common among the older dentists. Approximately 93 percent of all practitioners under 55 years of age reported the employment of at least one auxiliary. The proportion employing auxiliary personnel decreases to 70 percent for dentists 55-64 years of age and to 57 percent for those dentists who are 65 and over.

About 18 percent of the responding dental practitioners in Wyoming reported one or more vacancies for auxiliary personnel. Almost two-thirds of these dentists had vacant positions for dental hygienists.

OTHER SURVEY FINDINGS

☐ Three-fourths of the survey respondents reported that they are licensed to practice dentistry in at least one State in addition to Wyoming. More than three-fifths of the in-State respondents hold more than one other license, including 12 percent who have two or more other licenses. Multiple licensure is more common among respondents who are licensed in Wyoming but located in another State; one-half of these dentists hold two or more licenses in addition to a Wyoming license.

☐ More than two-fifths of the licenses held outside Wyoming are held in three of the six adjacent States, with 24 percent in Nebraska, 12 percent in Colorado, and 8 percent in Montana. Four other States--California, Missouri, Minnesota, and Oregon--account for a third of the out-of-State licenses.

☐ Ninety-eight percent of the professionally active dentists in Wyoming are primarily engaged in private practice, with 96 percent self-employed and 2 percent employed by another dentist. The remaining 2 percent are employed by governmental agencies, or are engaged in some other dental activity, such as taking advanced training.

☐ Only 6 percent of the respondents reported that they limit their practice to a dental specialty, including 3 percent each in orthodontics and oral surgery. The majority of the dentists in limited practice are located in Laramie and Natrona Counties.

☐ Of the responding dentists who are licensed in Wyoming but located in another State, almost three-fifths are concentrated in five States, including 17 percent in California, 15 percent in Nebraska, 12 percent in Colorado, and 7 percent each in Oregon and Arizona. The remaining out-of-State dentists are scattered throughout 14 other States, with the largest numbers in Montana, South Dakota, and Missouri.

☐ One in every four of the out-of-State respondents reported that they had been professionally active in Wyoming immediately prior to assuming their present location in another State. More than one-half of these out-migrant dentists are currently located in adjacent States, primarily Nebraska and Colorado.

APPENDIX TABLE

Selected Data on Dentists in Wyoming, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respondents	Non-respondents	Age in 1965		Professionally active		
				Under 40	55 years or more			
All counties 2/	153	130	23	53	49	148	350.8	2,370
Central city 25,000-49,999	57	50	7	19	16	55	125.2	2,276
Laramie	28	26	2	11	8	27	67.4	2,496
Natrona	29	24	5	8	8	28	57.8	2,064
Central city 10,000-24,999	32	28	4	12	11	31	58.3	1,881
Albany	13	13	-	6	4	13	23.7	1,823
Sheridan	12	11	1	3	4	12	18.4	1,533
Sweetwater	7	4	3	3	3	6	16.2	2,700
Central city 5,000-9,999	24	17	7	7	9	22	53.7	2,441
Carbon	6	5	1	-	4	5	14.8	2,960
Fremont	11	8	3	5	2	11	29.3	2,664
Washakie	7	4	3	2	3	6	9.6	1,600
Central city 2,500-4,999	26	22	4	9	10	26	70.6	2,715
Campbell	2	1	1	1	1	2	6.4	3,200
Converse	3	2	1	1	2	3	6.6	2,200
Goshen	4	4	-	-	1	4	11.5	2,875
Hot Springs	2	2	-	2	-	2	6.9	3,450
Johnson	2	1	1	1	-	2	5.8	2,900
Park	7	6	1	2	3	7	17.5	2,500
Uinta	5	5	-	1	3	5	7.5	1,500
Weston	1	1	-	1	-	1	8.4	8,400

APPENDIX TABLE (cont'd.)

Selected Data on Dentists in Wyoming, by Location

County group and county	Civilian dentists						Population 1/ (in 000's)	Persons per active dentist
	Total	Respond-ents	Non-respond-ents	Age in 1965		Profes-sionally active		
				Under 40	55 years or more			
Central city under 2,500	14	13	1	6	3	14	43.0	3,071
Big Horn	5	5	-	2	1	5	11.3	2,260
Crook	-	-	-	-	-	-	4.7	-
Lincoln	3	3	-	2	-	3	9.0	3,000
Niobrara	2	1	1	1	-	2	3.3	1,650
Platte	2	2	-	-	1	2	6.8	3,400
Sublette	1	1	-	-	1	1	4.3	4,300
Teton	1	1	-	1	-	1	3.2	3,200
Yellowstone National Park	-	-	-	-	-	-	0.4	-

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2/ Counties have been grouped according to the 1960 population of the largest (central) city within each county.